STATE RCRA PERMIT

FACILITY:	DENVER ARAPAHOE CHEMICAL WASTE PROCESSING FACILITY (DACWPF) RECONSTRUCTED CELL
ADDRESS:	25700 EAST YALE AVENUE AURORA, COLORADO 80014
LATITUDE, LONGITUDE:	39° 39' 31.9" N, 104° 41' 07.8" W; or 39.658908, -104.685491
EPA ID NO.:	COD000695007
DATE OF ISSUANCE:	April 21, 2020
EFFECTIVE DATE:	May 21, 2020
EXPIRATION DATE:	May 21, 2030
PERMIT NUMBER:	CO-20-04-21-01

STATE RCRA PERMIT NO. CO-20-04-21-01

FACILITY: DACWPF RECONSTRUCTED CELL

ADDRESS: 25700 EAST YALE AVENUE

AURORA, COLORADO 80014

EPA ID NO.: COD000695007

Pursuant to the Colorado Hazardous Waste Act (Title 25, Article 15, Sections 101 *et. seq.*, "the Act") and regulations promulgated thereunder by the Colorado Board of Health and Colorado Hazardous Waste Commission (codified in Title 6 of the Code of Colorado Regulations, "CCR"), a permit is issued to Waste Management of Colorado, Inc. (WMC, the "Permittee"), to permit the Permittee to conduct Post-Closure care operations at the DACWPF Reconstructed Cell (the "Facility") located in Arapahoe County at 25700 East Yale Avenue, Aurora, Colorado, at latitude 39° 39' 31.9" N and longitude 104° 41' 07.8" W. The Permittee must comply with terms and conditions of this State RCRA Permit Number CO-20-04-21-01 (the "Permit").

The Permit consists of the conditions contained herein, which includes any attachment, and the applicable regulations contained in 6 CCR 1007-3, Parts 260 through 268, 2 and 100 as specified in the Permit. Applicable regulations are those which are in effect on the date of issuance of the Permit. This Permit is based on the assumption that the information submitted in the Colorado Hazardous Waste Notification Form and April 30, 2019 RCRA Part A, and Part B, Permit Application (collectively the "Application") is accurate and that the Facility will be maintained and operated as specified in the Application. Any inaccuracies found in the submitted information may be grounds for the termination, revocation, and reissuance or modification of this Permit in accordance with 6 CCR 1007-3, Section 100.6 and for potential enforcement action. The Permittee must inform the Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management (the "Department" or "Division") of any deviation from changes in the information in the Application which would affect the Permittee's ability to comply with the applicable regulations or permit conditions.

This Permit is effective as of May 21, 2020 and shall remain into effect until for a ten year duration unless revoked, and reissued, or terminated.

Signed: Doug Knappe

Date: April 21, 2020

Doug Knappe, Program Manager
Hazardous Waste Program
Hazardous Materials and Waste Management Division
Colorado Department of Public Health and Environment

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ATTACHMENTS

PART I: STANDARD PERMIT CONDITIONS

I.A EFFECT OF PERMIT

The Permittee must manage the facility throughout the Post-Closure Period in accordance with the conditions of this Permit. Any post-closure care activities at the reconstructed cell not authorized in this Permit are prohibited. Compliance with this Permit constitutes compliance, for purposes of enforcement, with the Act and Subtitle C of RCRA except for those requirements not included in this Permit which subsequently become effective by statute or which are promulgated under Part 268 of the state or federal regulations restricting the placement of hazardous waste in or on the land. Issuance of this Permit does not preclude the Colorado Department of Public Health and Environment from issuing any order pursuant to the immediate and substantial threat provisions of the Act. [6 CCR 1007-3, Sections 264.4].

I.B PERMIT MODIFICATION, REVOCATION AND REISSUANCE, AND TERMINATION

This Permit may be modified, revoked and reissued, or terminated for cause, as specified in 6 CCR 1007-3, Section 100.60. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of the Permittee, does not stay the applicability or enforceability of any permit condition.

I.C SEVERABILITY

The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby.

I.D DEFINITIONS

For purposes of this Permit, terms used herein have the same meaning as those in 6 CCR 1007-3, Parts 2, 99, 100, 101 and 260 through 279, unless this Permit specifically provides otherwise. Where terms are not defined in the regulations or the Permit, the meaning associated with such terms is as defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term. "Director" means the Director of the Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division, or his/her designee or authorized representative. "Act" means the Colorado Hazardous Waste Act, C.R.S. §§ 25-15-101, et seq.

I.E DUTIES AND REQUIREMENTS

I.E.1 Duty to Comply

The Permittee must comply with all conditions of this Permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit. Any Permit noncompliance, other than noncompliance authorized by an emergency permit, constitutes a violation of the Act and is grounds for enforcement action; for Permit termination, revocation and reissuance, or modification; or for denial of a Permit renewal application. [6 CCR 1007-3, Sections 100.42(a), 100.61, and 100.64].

I.E.2 Duty to Reapply

If the Permittee wishes to continue an activity allowed by this Permit after the expiration date of this Permit, the Permittee must submit a complete application for a new Permit at least 180 days prior to Permit expiration. [6 CCR 1007-3, Sections 100.42(b) and 100.11(e)(1)].

I.E.3 Permit Expiration

Pursuant to 6 CCR 1007-3, Section 100.45, this Permit shall be effective for a fixed term not to exceed ten years. The Permit and all conditions herein will remain in effect beyond the Permit's expiration date, if the Permittee has submitted a timely, complete application and, through no fault of the Permittee, a new permit has not been issued. [6 CCR 1007-3, Section 100.11(e)(2)].

I.E.4 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this Permit. [6 CCR 1007-3, Section 100.42(c)].

I.E.5 Duty to Mitigate

The Permittee must take all reasonable steps to minimize or correct any adverse impact on human health or the environment resulting from noncompliance with this Permit [6 CCR 1007-3, Sections 100.42(d)].

I.E.6 Proper Operation and Maintenance

The Permittee must at all times properly operate and maintain all facilities and systems of disposal and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate process controls, including appropriate quality assurance/quality control procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this Permit. [6 CCR 1007-3, Section 100.42(e)].

I.E.7 Duty to Provide Information

The Permittee must furnish to the Director, within a reasonable time, any relevant information which the Director may request, to determine whether cause exists for modifying, revoking and reissuing, or terminating this Permit, or to determine compliance with this Permit. The Permittee must also furnish to the Director, upon request, copies of records required to be kept by this Permit. [6 CCR 1007-3, Sections 264.74(a), 100.42(h)].

I.E.8 Inspection and Entry

The Permittee must allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

I.E.8.a Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;

I.E.8.b Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;

I.E.8.c Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and

I.E.8.d Sample or monitor, at reasonable times, for the purposes of assuring Permit compliance or as otherwise authorized by the Act, any substances or parameters at any location. [6 CCR 1007-3, Section 100.42(i)].

I.E.9 Monitoring and Records

I.E.9.a Samples and measurements taken for the purpose of monitoring must be representative of the monitored activity. If the Department finds, based on tests, studies, or other information, that the sampling or analytical methods being used are inadequate to achieve the performance objectives of the activity, the Director may require use of alternative methods which the Department finds are adequate to meet the performance objectives of the activity. [6 CCR 1007-3, Sections 100.42(j)(1) and 260.12].

I.E.9.b The Permittee must retain records of all monitoring information, including all calibration and maintenance records and all original written, printed or electronic recordings for continuous monitoring instrumentation, copies of all reports and records required by this Permit, and records of all data used to complete the application for this Permit from the date of the sample, measurement, report, record, certification, or application until post-closure care is terminated. This period may be extended by request of the Director at any time and is automatically extended during the course of any unresolved enforcement action regarding this facility. The Permittee must maintain records from all ground-water monitoring wells and associated ground-water

surface elevations for the post-closure care period. [6 CCR 1007-3, Sections 264.74(b) and 100.42(j)(2)].

I.E.9.c Pursuant to 6 CCR 1007-3, Section 100.42(j)(3), records of monitoring information must include:

i. The dates, exact place, and times of sampling or measurements;

ii. The individuals who performed the sampling or measurements;

iii. The date(s) analyses were performed;

iv. The individuals who performed the analyses;

v. The analytical techniques or methods used; and

vi. The results of such analyses.

I.E.10 Reporting Planned Changes

The Permittee must give notice to the Director, as soon as possible, of any planned physical alterations or additions to the permitted facility. [6 CCR 1007-3, Section 100.42(l)(1)].

I.E.11 Reporting Anticipated Noncompliance

The Permittee must give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with Permit requirements. [6 CCR 1007-3, Section 100.42(l)(2)].

I.E.12 Repairs

Repairs must be conducted and documented in accordance with the Inspection and Maintenance Plan contained in Permit Attachment C. The comments section of the "Repair Certification" form must indicate whether the feature being repaired is now functioning in a manner that complies with this Permit. The Permittee must continue post-closure care of the facility to the extent possible unless limited by repairs during the repair process.

I.E.13 Transfer of Permits

This Permit is not transferable to any person, except after notice to the Director. The Director may require modification or revocation and reissuance of the Permit. Before transferring ownership or operation of the facility during its post-closure care period, the Permittee must notify the new owner or operator in writing of the requirements of 6 CCR 1007-3, Parts 264 and 100, and of this Permit. [6 CCR 1007-3, Sections 100.42(l)(3), 100.62, and 264.12(c)].

I.E.14 Twenty-Four Hour Reporting

I.E.14.a The Permittee must report to the Director any noncompliance which may endanger health or the environment. Any such information must be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances. The report must include the following:

i. Information concerning release of any hazardous waste that may cause an endangerment to public drinking water supplies.

ii. Any information of a release or discharge of hazardous waste or of a fire or explosion from the hazardous waste management facility which could threaten the environment or human health outside the facility.

I.E.14.b The description of the occurrence and its cause must include:

i. Name, address, and telephone number of the owner or operator;

ii. Name, address, and telephone number of the facility;

iii. Date, time, and type of incident;

iv. Name and quantity of materials involved;

v. The extent of injuries, if any;

vi. An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and

vii. Estimated quantity and disposition of recovered material that resulted from the incident.

I.E.14.c A written submission must also be provided within five days of the time the Permittee becomes aware of the circumstances. The written submission must contain a description of the noncompliance and its cause; the period(s) of noncompliance (including exact dates and times); whether the noncompliance has been corrected; and, if not, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. The Director may waive the five-day written notice requirement in favor of a written report within 15 days. [6 CCR 1007-3, Section 100.42(l)(6)].

I.E.15 Other Noncompliance

The Permittee must report all other instances of noncompliance not otherwise required to be reported in Permit Conditions I.E.10, I.E.11, and I.E.14., at the time annual monitoring reports are submitted. The reports must contain the information listed in Permit Condition I.E.14. [6 CCR 1007-3, Section 100.42(l)(7)].

I.E.16 Other Information

Whenever the Permittee becomes aware that it failed to submit any relevant facts in the Permit application, or submitted incorrect information in the Permit application or in any report to the Director, the Permittee must submit such facts or information within thirty (30) calendars days. [6 CCR 1007-3, Section 100.42(l)(8)].

I.F SIGNATORY REQUIREMENT

All applications, reports, or information submitted to or requested by the Director, their designee, or authorized representative, shall be signed and certified in accordance with 6 CCR 1007-3, Section 100.44(a). [6 CCR 1007-3, Section 100.42(k)].

I.G REPORTS, NOTIFICATIONS, AND SUBMISSIONS TO THE DIRECTOR OR DESIGNEE

All reports, notifications, or other submissions which are required by this Permit to be sent or given to the Director and/or the Department should be sent by certified mail (or any other means that establishes proof of delivery) to:

Colorado Department of Public Health and Environment

Hazardous Materials and Waste Management Division

HMWMD-HWC-B2

4300 Cherry Creek Drive South

Denver, Colorado 80246-1530

If a report, notification, or other submission is sent by e-mail, the document must be e-mailed to the current project manager at the Department assigned to DACWPF. The text of the email must include language requesting the current project manager to reply and confirm receipt of the e-mail and any attachment to the e-mail. An e-mail and any attachment to the e-mail will not be deemed to have been received by the Director until the current project manager sends a reply confirming receipt of the e-mail and any attachment to the e-mail.

I.H CONFIDENTIAL INFORMATION

In accordance with 6 CCR 1007-3, Part 2, the Permittee may claim confidential any information required to be submitted by this Permit.

I.I DOCUMENTS TO BE MAINTAINED AT THE POST-CLOSURE OPERATIONAL OFFICE

The Permittee must maintain at the designated post-closure operational office, until post-closure care is completed and certified by an independent, Colorado registered Professional Engineer, the following documents and all amendments, revisions and modifications to these documents:

I.I.1 Waste Analysis Plan (Permit Attachment B). [6 CCR 1007-3, Section 264.13].

I.I.3 Inspection Schedules (Permit Attachment C). [6 CCR 1007-3, Section 264.15(b)(2)].

I.I.4 Personnel Training Plan (Permit Attachment I) and records required by that plan. [6 CCR 1007-3, Section 264.16(d)].

I.I.5 Contingency Plan (Permit Attachment D). [6 CCR 1007-3, Section 264.53(a)].

I.I.6 All other documents required by Permit Condition I.E.9.

I.I.7 This Permit and all approved modifications.

I.I.8 Most recent Annual Report.

PART II: GENERAL FACILITY CONDITIONS

II.A DESIGN AND OPERATION OF FACILITY

The Permittee must conduct post-closure care operations pursuant to the conditions of this Permit at the facility to minimize the possibility of a fire, explosion, or any unplanned, sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water or groundwater which could threaten human health or the environment. [6 CCR 1007-3, Section 264.31].

II.B GENERAL WASTE ANALYSIS

The Permittee must follow the waste analysis procedures for the ground-water collected pursuant to the ground-water monitoring program and for the reconstructed cell leachate as described in the attached Waste Analysis Plan, Permit Attachment B. [6 CCR 1007-3, Section 264.13].

II.C PERSONNEL TRAINING

The Permittee must conduct personnel training. This training program must follow the attached Personnel Training Plan, Permit Attachment I. [as required by 6 CCR 1007-3, Section 264.16].

II.D PREPAREDNESS AND PREVENTION

II.D.1 Required Equipment

At a minimum, the Permittee must maintain at the facility, or have available when on site at the facility, the equipment set forth in the Contingency Plan, Permit Attachment D. [6 CCR 1007-3, Section 264.32].

II.D.2 Testing and Maintenance of Equipment

The Permittee must test and maintain the equipment specified in Permit Condition II.D.1, as necessary, to assure its proper operation in time of emergency. [6 CCR 1007-3, Section 264.33].

II.D.3 Access to Communications System

The Permittee must provide communication devices (e.g., radios, cell phones, etc.) as set forth in the Contingency Plan, Permit Attachment D. [6 CCR 1007-3, Section 264.34].

II.D.4 Arrangements with Local Authorities

The Permittee must attempt to maintain arrangements with state and local authorities as set forth in the Preparedness and Prevention Plan, Permit Attachment D. If state or local officials refuse to enter into the preparedness and prevention arrangement with the Permittee, the Permittee must document this refusal. [6 CCR 1007-3, Section 264.37].

II.E CONTINGENCY PLAN

II.E.1 Implementation of Plan

The Permittee must immediately carry out the provisions of the Contingency Plan, Permit Attachment D, whenever there is a fire, explosion, or release of hazardous waste or constituents which could threaten human health or the environment.

II.E.2 Copies of Plan

The Permittee must keep a copy of the Contingency Plan and all revisions at the designated post-closure operational office, and ensure that a copy is available at the facility when field operations personnel are at the facility. The Permittee must submit copies of the plan with all relevant maps, figures, and revisions to all local fire departments, hospitals and local emergency response teams that may be called to provide emergency services. [6 CCR 1007-3, Section 264.53].

II.E.3 Amendments to Plan

The Permittee must review and immediately amend, if necessary, the Contingency Plan if:

II.E.3.a. The Permit is revised;

II.E.3.b. The plan fails in an emergency;

II.E.3.c. The facility changes -- in its design, construction, operation, maintenance, or other circumstances -- in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;

II.E.3.d. The list of emergency coordinators changes; or

II.E.3.e. The list of emergency equipment changes.

[6 CCR 1007-3, Section 264.54].

II.E.4 Emergency Coordinator

A trained emergency coordinator must be available at all times in case of an emergency. [6 CCR 1007-3, Section 264.55].

The names, addresses, and phone numbers of all persons qualified to act as emergency coordinators must be supplied to the Director or his designee. [6 CCR 1007-3, Section 264.52(d)].

The emergency coordinator and their alternate are listed in Permit Attachment D.

II.F MANIFEST SYSTEM

The Permittee must comply with the manifest requirements of 6 CCR 1007-3, Part 262, and Sections 264.71 and 264.72 when and if hazardous wastes are shipped off-site.

II.G FINANCIAL ASSURANCE AND COST ESTIMATE FOR FACILITY POST-CLOSURE CARE

II.G.1 The Permittee must maintain financial assurance during the post-closure period and comply with all applicable requirements of 6 CCR 1007-3 Part 266. [6 CCR 1007-3 266.14].

II.G.2 During the post-closure care period for the facility, the Permittee shall adjust and revise in accordance with the regulations the post closure cost estimate in accordance with 6 CCR 1007-3 §266.13(b) and (c).

II.G.3 The Permittee shall keep at the post-closure care offices the latest post closure cost estimate prepared in accordance with 6 CCR 1007-3 §266.13(a) and (c) and, when this estimate has been adjusted or revised in accordance with Condition II.G.2., the latest adjusted/revised post closure cost estimate. [6 CCR 1007-3, §266.13(d)]

II.H LAND DISPOSAL RESTRICTIONS

The Permittee must comply with all applicable 6 CCR 1007-3, Part 268 regulations.

II.I PROHIBITED USES

The Permittee is prohibited from accepting for storage and/or disposal at the reconstructed cell any hazardous waste, and from bringing onto the facility any hazardous waste for storage and/or disposal at the reconstructed cell.

PART III: POST-CLOSURE CARE

III.A SUMMARY OF POST-CLOSURE CARE OPERATIONS

A summary of the post-closure care operations to be conducted at the facility is described below. Closure certification for the entire DACWPF, including the reconstructed cell facility, was received by the Director on March 8, 1990. The post-closure period was initiated after closure, and with this renewal Permit, post-closure care of the reconstructed cell will continue for the next ten (10) years. The Department may shorten or extend the post-closure care period. Post-closure care must be implemented in accordance with the conditions of this Permit. Post-closure care, monitoring and maintenance will include, but not be limited to, routine facility inspections; ground water and leachate sampling, analysis and statistical evaluation; recordkeeping, reporting and implementation of facility repairs and remedial activities as deemed necessary. [6 CCR 1007-3, Sections 264.110 and 264.117].

III.B POST-CLOSURE PROCEDURES AND USE OF PROPERTY

III.B.1 The Permittee must conduct post-closure care for the reconstructed cell pursuant to this Permit, to begin on the effective date of this Permit.

III.B.2 The Permittee must maintain and monitor the ground-water monitoring system in accordance with this Permit. [6 CCR 1007-3 Part 264 Subpart F].

III.B.3 The Permittee must comply with the requirements for landfills at the reconstructed cell, as follows:

III.B.3.a Maintain the integrity and effectiveness of the final cover and liner systems, including making repairs to the cap, as necessary, to correct the effects of settling, subsidence, erosion, or other events, and evaluate the secondary sump leachate as an indicator of the integrity of the liner system;

III.B.3.b Continue to operate the leachate collection and removal system whenever leachate is detected;

III.B.3.c Maintain and monitor the ground-water monitoring system and comply with all other ground-water related Permit conditions;

III.B.3.d Prevent run-on and run-off from eroding or otherwise damaging the final cover; and

III.B.3.e Protect and maintain the following surveyed benchmarks which are illustrated in Permit Attachment E, Figure E-1:

BM-1A

BM-2A

[6 CCR 1007-3, Section 264.310(b)].

III.B.4 The Permittee must not allow any use of the reconstructed cell which will disturb the integrity of the final cover, liners, any components of the containment system, or the function of the reconstructed cell's monitoring systems during the post-closure care period. [6 CCR 1007-3 264.117(c)].

III.B.5 The Permittee must conduct all post-closure care activities in accordance with the provisions of this Permit. [6 CCR 1007-3 Sections 264.117(d) and 264.118(b)].

III.C SECURITY

The Permittee must maintain security at the facility during the post-closure care period, in accordance with the conditions of this Permit. [6 CCR 1007-3, Section 264.117(b)]. The reconstructed cell and groundwater monitoring wells and piezometers at the facility are completely surrounded by a security fence to control unauthorized entry as illustrated on Permit Attachment A-1, Figure 2. The security fence is a six foot high chain link fence with 3 strands of barbed wire across the top. It has a main gate which is kept closed and locked 24 hours a day except when authorized personnel need access to the reconstructed cell and groundwater monitoring wells and piezometers at the facility. Nevertheless, semi-annual inspections of security facilities in accordance with the Inspection Schedule (Permit Attachment C) must assure that access to the reconstructed cell and groundwater monitoring wells and piezometers at the facility by unauthorized personnel is not permitted and that the security system is well maintained. All locks must be repaired or replaced immediately after they are found to be broken. Any damage to the fence or gate must be repaired as soon as reasonably possible (repairs must be initiated no later than one month of their identification).

In accordance with 6 CCR 1007-3, Section 264.14 (c), warning signs are posted on the security fence and must be maintained. The warning signs must be visible from a distance of twenty five (25) feet, indicate that only authorized personnel are allowed to enter and that entry may be dangerous.

III.D GENERAL INSPECTION REQUIREMENTS

The Permittee must follow the inspection schedule set out in Permit Attachment C. The Permittee must inspect the components, structures and equipment located at the facility and used for facility operations in accordance with the Inspection Schedule. The Permittee must remedy any deterioration or malfunction discovered by an inspection, as detailed in Permit Attachment C. [6 CCR 1007-3, Sections 264.15(c) and 264.118(b)]. Records of inspections must be kept for the duration of the post-closure care period.

III.E NOTICES AND CERTIFICATION

III.E.1 If the Permittee or any subsequent owner or operator of the land upon which the reconstructed cell is located, wishes to remove hazardous wastes and hazardous waste residues, the liner, or contaminated soils, then he/she must request a modification to this Permit in accordance with the applicable requirements in 6

CCR 1007-3 Parts 264 and 100. The Permittee or any subsequent owner or operator of the land must demonstrate that the removal of hazardous wastes will satisfy the criteria of 6 CCR 1007-3, Section 264.117(c). [6 CCR 1007-3, Section 264.119(c)].

III.E.2 In the event the Division determines that post-closure care may cease, no later than 60 days after such determination the Permittee must submit to the Director, or designee, by registered mail, a certification that the post-closure care for the reconstructed cell was performed in accordance with the specifications in this Permit. The certification must be signed by the Permittee and an independent, Professional Engineer, registered in the State of Colorado. Documentation supporting the independent, registered Professional Engineer's certification must be furnished to the Director upon request until the Director releases the Permittee from the financial assurance requirements for post-closure care under 6 CCR 1007-3, Section 266.14. [6 CCR 1007-3, Section 264.120].

III.F POST-CLOSURE PERMIT MODIFICATIONS

III.F.1 The Permittee must request a permit modification to authorize a change in this Permit. This request must be in accordance with applicable requirements of 6 CCR 1007-3 Parts 100 and 264, and must include a copy of the modification for approval by the Director. The Permittee must request a permit modification whenever changes in operating plans or facility design affect this Permit or post-closure care activities, there is a change in the expected year of post-closure care termination, or other events occur during the post-closure life of the facility that affect this Permit or post-closure care activities. The Permittee must submit a written request for a permit modification at least 60 days prior to the proposed change in facility design or operation, or no later than 60 days after an unexpected event has occurred which has affected this Permit or post-closure care activities. [6 CCR 1007-3 264.118(d)].

III.F.2 If the Permittee determines the detection monitoring program no longer satisfies the requirements of 6 CCR 1007-3, Section 264.98, the Permittee must, within 90 days of the determination, submit an application for a permit modification according to the procedures specified in 6 CCR 1007-3, Part 100 to make any appropriate changes to the program. [6 CCR 1007-3, Section 264.98(h)].

PART IV: GROUND-WATER AND LEACHATE MONITORING SYSTEMS

IV.A RCRA GROUND-WATER MONITORING PROGRAM

The Permittee will conduct groundwater monitoring of the reconstructed cell for the length of the post-closure care period in accordance with the Groundwater Monitoring and

Statistical Evaluation Procedures, Permit Attachment F. The Permittee must maintain the groundwater monitoring wells specified in Permit Attachment C to ensure that they are suitable for use as RCRA groundwater monitoring wells.

IV.B. MONITORING OF THE UPPER AND INTERMEDIATE SANDSTONE UNITS

The Director believes that there is the possibility that a leak in the reconstructed cell could manifest itself in two sandstone units in the vicinity of the reconstructed cell -- the upper and intermediate sandstone units. Thus, in addition to the RCRA groundwater monitoring described in Section IV.A. of this Permit, the Permittee must also monitor the groundwater within these two sandstone units. The required monitoring of these sandstone units is specified in the Sandstone Units & Leachate Monitoring Plan, Permit Attachment G.

IV.C. LEACHATE MONITORING PROGRAM AND MANAGEMENT

The Permittee will monitor the leachate in accordance with Permit Attachment G. The Permittee will also inspect and manage the leachate collected from the primary and secondary leachate collection systems in accordance with Permit Attachment C.

PART V: CORRECTIVE ACTION FOR SOLID WASTE MANAGEMENT UNITS

V.A DEFINITIONS

Any term found in the Permit will be defined as in the Colorado Hazardous Waste Regulations.

V.B SUMMARY OF RFA FINDINGS/RESULTS

The following Solid Waste Management Units (SWMUs) were identified by the Director during the RCRA Facility Assessment (RFA):

SWMU NO. 1: Reconstructed Waste Disposal Cell

The Reconstructed Cell is comprised of a southern clean closed surface impoundment (pond 3) and two reconstructed disposal cells (ponds 1 and 2) north of the clean closed surface impoundment. Pond 3 was clean closed and no further action is required under the Corrective Action provisions of this Permit.

Post-closure care of the reconstructed cell will be conducted in accordance with this Permit. As such, no further action is required at this unit under the Corrective Action provisions of this Permit.

SWMU NO. 2: Section 32 Municipal Sludge Disposal Area

Municipal sludge disposal farming operations occurred on the land in Section 32 of Township 4 South, Range 65 West in which the facility is located. The Director's RFA indicated the

possible disposal of hazardous waste or Appendix VIII hazardous constituents (6 CCR 1007-3; Section 261) at the municipal sludge disposal farming areas. These constituent concentrations were evaluated as part of the clean closure equivalency demonstration. No further action is required under the Corrective Action provisions of this Permit.

V.C NOTIFICATION REQUIREMENTS FOR NEWLY-DISCOVERED RELEASES AT SWMUs

The Permittee must notify the Director or designee, in writing, of any newly discovered release(s) of hazardous waste including hazardous constituents discovered at the facility during the course of ground-water monitoring, field investigation, environmental auditing, or other activities, no later than fifteen (15) calendar days after discovery. Such newly-discovered releases may be from newly-identified units, or from units for which, based on the findings of the RFA, the Director had previously determined that no further investigation was necessary. After such notification, the Director may request, in writing, that the Permittee prepare a plan to further investigate the newly-identified release(s) and a proposed schedule of implementation and completion of such plan.

Attachment A

Colorado Hazardous Waste Notification
RCRA Part A Permit Application

MAIL FORM TO:
CDPHE
HMWMD-B2
4300 Cherry Creek Dr. S.
Denver, CO 80246-1530

COLORADO HAZARDOUS WASTE NOTIFICATION FORM

Replaces EPA Form 8700-12, 8700-13A/B, and Page 1 of 8700-23

Colorado Department of Public Health and Environment

1. Reason for Submittal: (Mark 'X' in the appropriate boxes)

- ☐ Initial notification and obtain an EPA ID Number for hazardous waste, universal waste, or used oil activities.
- ☒ Subsequent notification to update information **(Sec. 2-6 and 10 must be completed)**.
- ☐ Initial or Revised RCRA Hazardous Waste Part A Permit Application **(**Page 3-7 of 8700-23 must also be submitted).
- ☐ Component of a biennial Hazardous Waste Report and a subsequent notification.

2. Site EPA ID Number: COD000695007		County Name: ARAPAHOE	
3. Site Legal Name/Operator: DACWPF RECONSTRUCTED CELL FACILITY/WASTE MANAGEMENT OF COLORADO, INC.			
4. Site Location Information: Street Address: 25700 E. YALE AVE.			
City or Town: AURORA	State: **CO**	Zip Code: 80014	
5. Site Land Type: ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other			
6. North American Industry Classification System (NAICS) Code(s) for the Site:	**A.** 562211	**B.**	**C.**
7. Site Mailing Address Same as ☐ Location Street Address: 2400 W. UNION AVENUE			
City or Town: ENGLEWOOD	State: CO	Zip Code: 80110	
8. Site Contact Person First Name: TOM	MI: S.	Last Name: SCHWEITZER	
Job Title: SENIOR ENGINEER	Phone Number: (303) 914-1445	Extension:	
Address same as ☐ Location ☒ Mailing Street Address:			
City or Town:	State:	Zip Code:	
E-mail Address:			
9. **Name of Site's Owner:**		Phone Number:	
Address same as ☐ Location ☒ Mailing ☐ Contact Owners Street Address:			
City or Town:	State:	Zip Code:	
Owner Type: ☒ Private ☐ County ☐ District ☐ Federal ☐ Indian ☐ Municipal ☐ State ☐ Other			

10. Type of Regulated Waste Activity (Mark 'X' in the appropriate boxes for all <u>current</u> activities in Sections 10. A-C).

A. Hazardous Waste Activities For Items 3 through 7, check all that apply:

1. Generator of Hazardous Waste (regular monthly generation rate/choose only one)

- ☐ a. **LQG**: Greater than 1,000 kg/mo (2,200 lbs.) of non-acute hazardous waste; or
- ☐ b. **SQG**: 100 to 1,000 kg/mo (220 - 2,200 lbs.) of non-acute hazardous waste; or
- ☐ c. **CESQG**: Less than 100 kg/mo of non-acute hazardous waste

NOTE: The Department recommends that a facility that episodically or sporadically generates more waste than their regular monthly generation rate allows notify at the larger generator status in order to maintain a consistent waste management system and avoid continual re-notification.

2. One-Time Generation (not normally a hazardous waste generator or one-time exceedance of regular monthly generation rate**)**

☐ Large Quantity Generator; or ☐ Small Quantity Generator; or ☐ Conditionally Exempt Generator

NOTE: A one-time generator number is active for only one month. If the facility needs to keep their number active for more than one month or if they exceed their regular generation rate for more than one month, they should check the appropriate box in 10.A.1 and notify the Department when the number is no longer needed or they return to their regular monthly generation rate.

3. United States Importer of Hazardous Waste ☐

4. Mixed Waste Generator (hazardous and radioactive) ☐

A. Hazardous Waste Activities (continued)

- ☐ **5. Transporter of Hazardous Waste**
- ☐ **6. Hazardous Waste Transfer Facility**
- ☒ **7. Treater, Storer, or Disposer of Hazardous Waste requiring a hazardous waste Part A permit for this activity.**
- ☐ **8. Recycler of Hazardous Waste**
  Note: A hazardous waste permit may be required for this activity.
- **9. Exempt Boiler and/or Industrial Furnace**
  - ☐ a. Small Quantity On-site Burner Exemption
  - ☐ b. Smelting, Melting, Refining Furnace Exemption
- ☐ **10. Underground Injection Control**

B. Universal Waste Activities

1. Large Quantity Handler of Universal Waste
Indicate types of universal waste generated and/or consolidated at your site. Mark Consolidated if received from other Universal Waste Handlers. (check all boxes that apply):

	Generated	Consolidated
a. **Aerosol Cans**	☐	☐
b. **Electronic Devices and/or Components**	☐	☐
c. **Mercury-containing Devices**	☐	☐
d. Batteries		☐
e. Lamps		☐
f. Pesticides		☐
g. Mercury-containing equipment		☐

☐ **2. Destination Facility for Universal Waste**
Note: A hazardous waste permit may be required for this activity.

C. Used Oil Activities (check all boxes that apply):

- **1. Used Oil Transporter** ☐ a. Transporter ☐ b. Transfer Facility
- **2. Used Oil Processor and/or Re-refiner** ☐ a. Processor ☐ b. Re-refiner
- ☐ **3. Off-Specification Used Oil Burner** ☐ **5. Used Oil Collection Center**
- **4. Used Oil Fuel Marketer** ☐ a. Marketer Who Directs Shipment of Off-Spec. Used Oil to an Off-Spec. Used Oil Burner ☐ b. Marketer Who First Claims the Used Oil Meets the Specifications

11. Description of Hazardous Wastes List waste codes of the hazardous wastes handled at your site. List in order presented in the regulations (e.g., D001, D003, F007, U112). Use an additional page if needed.

Ignitable (D001) ☐ Corrosive (D002) ☐ Reactive (D003) ☐ Toxic ☐ (List specific codes below)

See comments below											

12. Comments

The facility is closed. The only remaining regulated unit is an evaporation ponds waste management unit that was closed as a reconstructed disposal cell. The entire waste stream inventory placed into the evaporation pond and the drum burial cell during operation of the Denver-Arapahoe Chemical Waste Processing Facility was attached to the Part A Application delivered to the Colorado Department of Health and Environment on February 28, 1992. The facility is handling delisted F039 wastes pursuant to Conditional Delisting.

13. Certification. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person(s) who manage the system, or those persons directly responsible for gathering the information, the information is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of owner, operator, or an authorized representative	Name and Official Title (type or print)	Date Signed
	Scott Bradley, President Waste Management of Colorado, Inc.	4/25/19

EPA ID Number | C | O | D | 0 | 0 | 0 | 6 | 9 | 5 | 0 | 0 | 7 |

OMB# 2050-0024; Expires 05/31/2020

United States Environmental Protection Agency

HAZARDOUS WASTE PERMIT PART A FORM

1. Facility Permit Contact

First Name	**TOM**	MI	**S**	Last Name	**SCHWEITZER**
Title	**SENIOR ENGINEER**				
Email	**tschweit@wm.com**				
Phone	**(303)914-1445**	Ext		Fax	

2. Facility Permit Contact Mailing Address

Street Address	**2400 W. UNION AVENUE**	
City, Town, or Village	**ENGLEWOOD**	
State **CO**	Country USA	Zip Code 80110

3. Facility Existence Date (mm/dd/yyyy)

3/8/1990

4. Other Environmental Permits

A. Permit Type	B. Permit Number	C. Description
	C O R - 9 0 0 9 6 2	**STORMWATER DISCHARGE PERMIT**

5. Nature of Business

No products are produced at this facility. The only services rendered at the facility are post-closure monitoring activities associated with the evaporation ponds waste management unit that was closed as a reconstructed disposal cell.

6. Process Codes and Design Capacities

Line Number		A. Process Code			B. Process Design Capacity (1) Amount	B. Process Design Capacity (2) Unit of Measure	C. Process Total Number of Units	D. Unit Name
					NA - See #11			

7. Description of Hazardous Wastes (Enter codes for Items 7.A, 7.C and 7.D(1))

Line No.		A. EPA Hazardous Waste No.				B. Estimated Annual Qty of Waste	C. Unit of Measure	D. Processes (1) Process Codes								D. Processes (2) Process Description (if code is not entered in 7.D1))
						NA										

8. Map

Attach to this application a topographical map, or other equivalent map, of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all spring, rivers, and other surface water bodies in this map area. See instructions for precise requirements.

9. Facility Drawing

All existing facilities must include a scale drawing of the facility. See instructions for more detail.

10. Photographs

All existing facilities must include photographs (aerial or ground-level) that clearly delineate all existing structures; existing storage, treatment, and disposal areas; and sites of future storage, treatment, or disposal areas. See instructions for more detail.

11. Comments

For items 8, 9 and 10 above, Figures 1 through 3 are provided at the end of Section 2 of Part A and Part B Post-Closure Permit Renewal Application for the DACWPF Reconstructed Cell Facility.

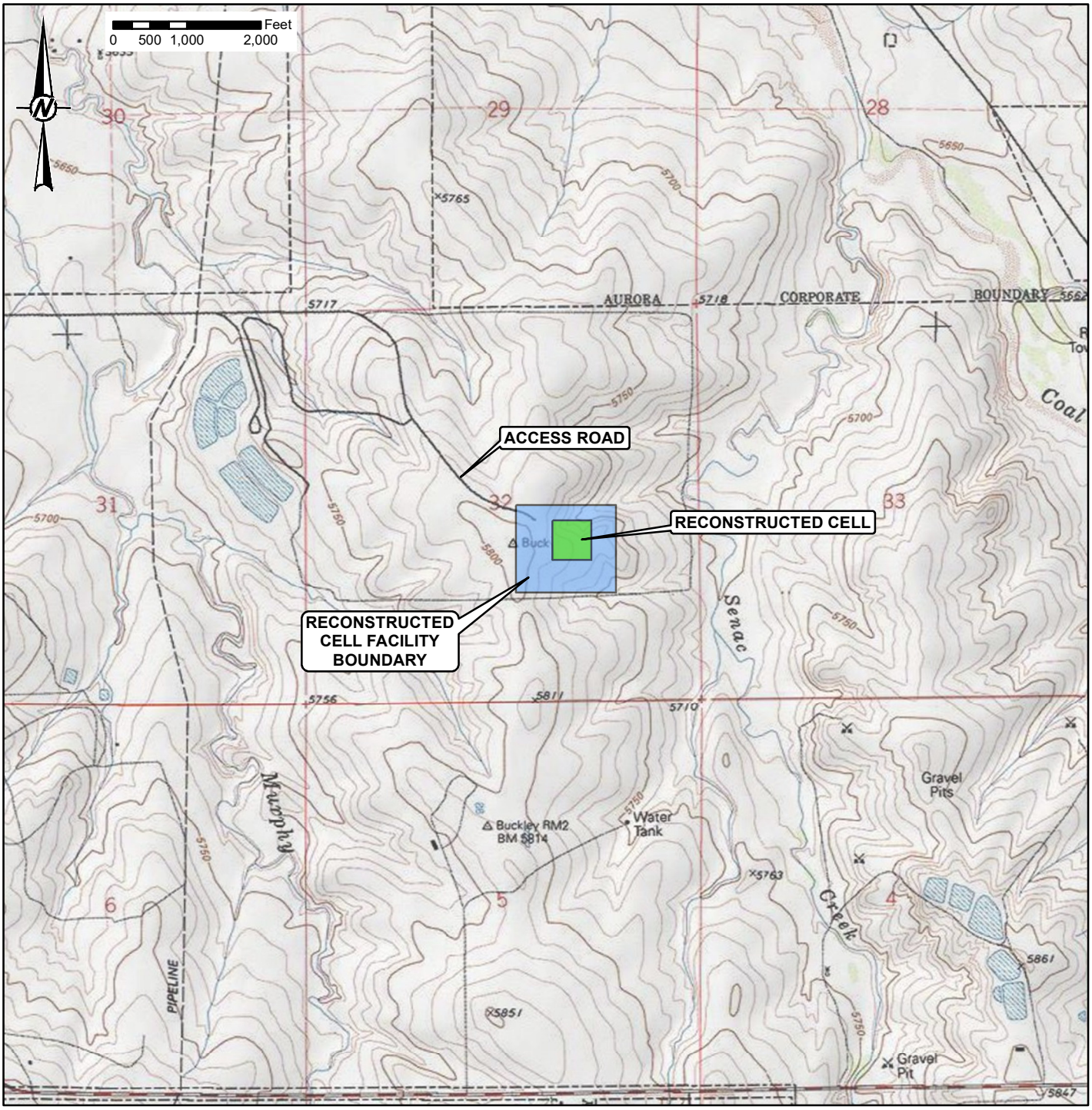
Comments regarding items 6 and 7 follow:

The facility is closed. The only remaining regulated unit is an evaporation ponds waste management unit that was closed as a reconstructed disposal cell. All of the wastes which were placed in the reconstructed cell originated from the former evaporation ponds waste management, the drum burial cell, the temporary stockpile at Pad C, and the associated decontamination pads, all of which were located at the larger Denver-Arapahoe Chemical Waste Processing Facility. The entire waste stream inventory placed in the evaporation ponds and the drum burial cell during operation of the Denver-Arapahoe Chemical Waste Processing Facility was attached to the Part A Application delivered to the Colorado Department of Public Health and Environment on February 28, 1992.

The volume of waste material in the reconstructed cell is estimated to be about 155,000 cubic yards. The surface area of the reconstructed cell is approximately 8.736 acres.

Attachment A-1

Figures



LEGEND

- RECONSTRUCTED CELL
- RECONSTRUCTED CELL FACILITY BOUNDARY

REFERENCE

1. BASEMAP: ESRI BASEMAP SERVICES, USGS. 1:24,000 SCALE QUADRANGLE SHOWN: "COAL CREEK, CO".

CLIENT
WASTE MANAGEMENT OF COLORADO, INC.

PROJECT
DACWPF RECONSTRUCTED CELL FACILITY
PART B POST-CLOSURE PERMIT RENEWAL

TITLE
SITE VICINITY MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-25
DESIGNED	KJC
PREPARED	KJC
REVIEWED	MDC
APPROVED	RM

PROJECT NO.
18111727

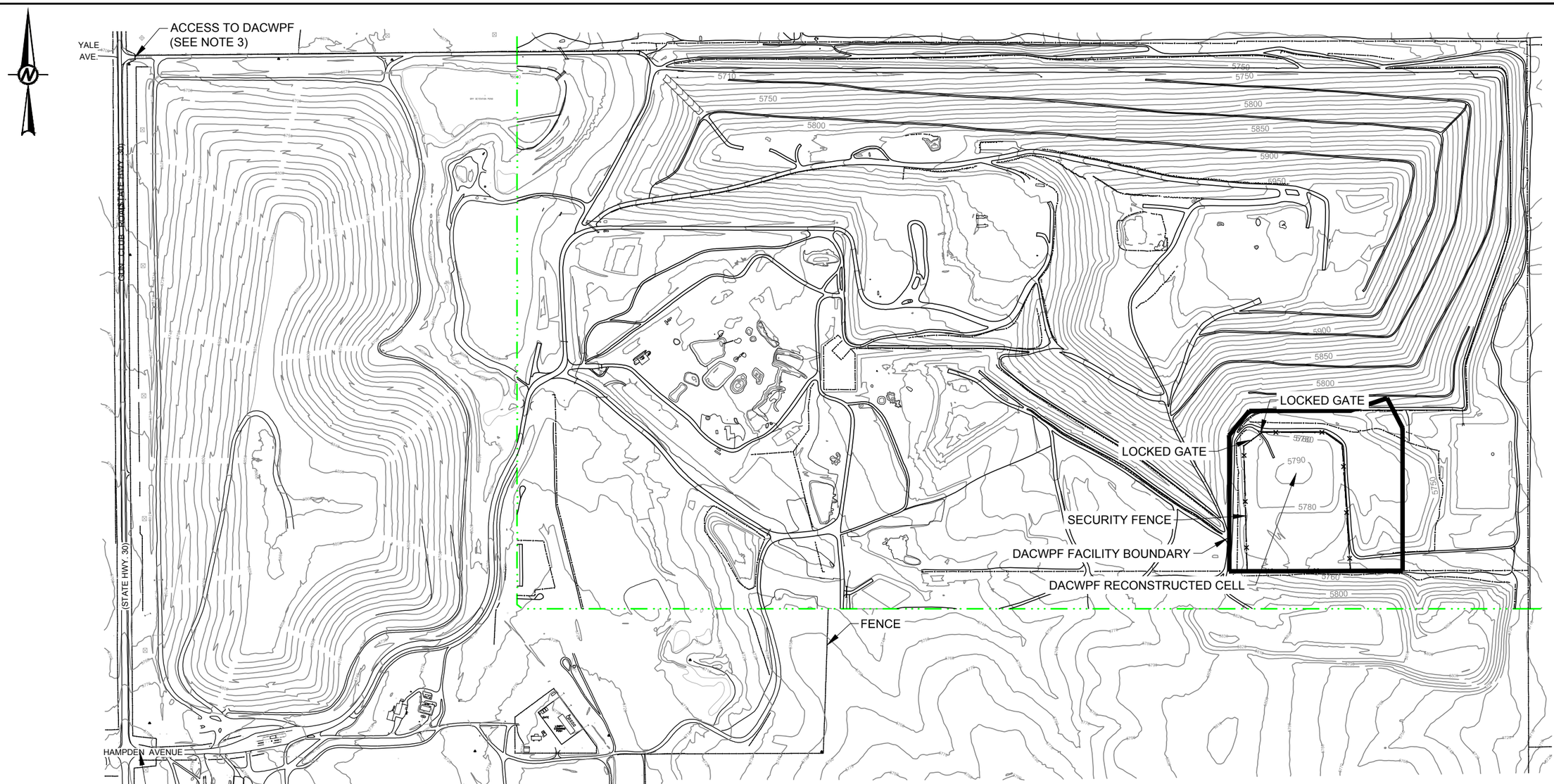
FIGURE
1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI A

25mm

0

PATH: M:\WasteManagement_DACWPF\Mapping\18111727_000\18_8x11_18111727_Figure1_SiteVicinity.mxd PRINTED ON: 2019-02-25 AT 1:58:10 PM



NOTE(S)

1. CONTOURS FROM AERIAL PHOTOGRAPHY TAKEN ON JANUARY 8, 2019 FOR WASTE MANAGEMENT. (NORTHEAST OF DELINEATOR)
2. CONTOURS FROM AERIAL PHOTOGRAPHY TAKEN ON APRIL 15, 2008 FOR WASTE MANAGEMENT. (SOUTH AND WEST OF DELINEATOR)
3. DACWPF MAY BE ACCESSED FROM GUN CLUB ROAD AT YALE AVENUE OR HAMPDEN AVENUE. THE GATE AT THE YALE AVENUE ENTRANCE IS TYPICALLY LOCKED. THE HAMPDEN AVENUE ENTRANCE IS TYPICALLY OPEN AS IT IS ALSO THE ENTRANCE TO DADS, WHICH IS COMMONLY A 24-HOUR OPERATION. INTERNAL ROADS MAY CHANGE FROM TIME-TO-TIME TO ACCOMMODATE DADS OPERATIONS.

LEGEND

- CONTOURS
- ROADS
- DELINEATOR BETWEEN SURVEYS

0 400 800
1" = 800' FEET

CLIENT
WASTE MANAGEMENT OF COLORADO, INC.

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-27
DESIGNED	RM
PREPARED	DBS
REVIEWED	MEM
APPROVED	RM

PROJECT
DACWPF RECONSTRUCTED CELL FACILITY
PART B POST-CLOSURE PERMIT RENEWAL

TITLE
IMMEDIATE VICINITY MAP

PROJECT NO. 18111727
REV. A
2

LEGEND

2019 CONTOURS

ROADS

PROPERTY BOUNDARY

P-107 GC-18 EXISTING GROUNDWATER MONITORING NETWORK

I-1 UPPER AND INTERMEDIATE SANDSTONE WELLS TO BE INSTALLED IF NECESSARY

BM-1A BENCHMARK LOCATIONS

NOTE(S)

1. CONTOURS FROM AERIAL PHOTOGRAPHY TAKEN ON JANUARY 8, 2019 FOR WASTE MANAGEMENT.

0 100 200

1" = 200' FEET

CLIENT
WASTE MANAGEMENT OF COLORADO, INC.

PROJECT
DACWPF RECONSTRUCTED CELL FACILITY
PART B POST-CLOSURE PERMIT RENEWAL

CONSULTANT
GOLDER

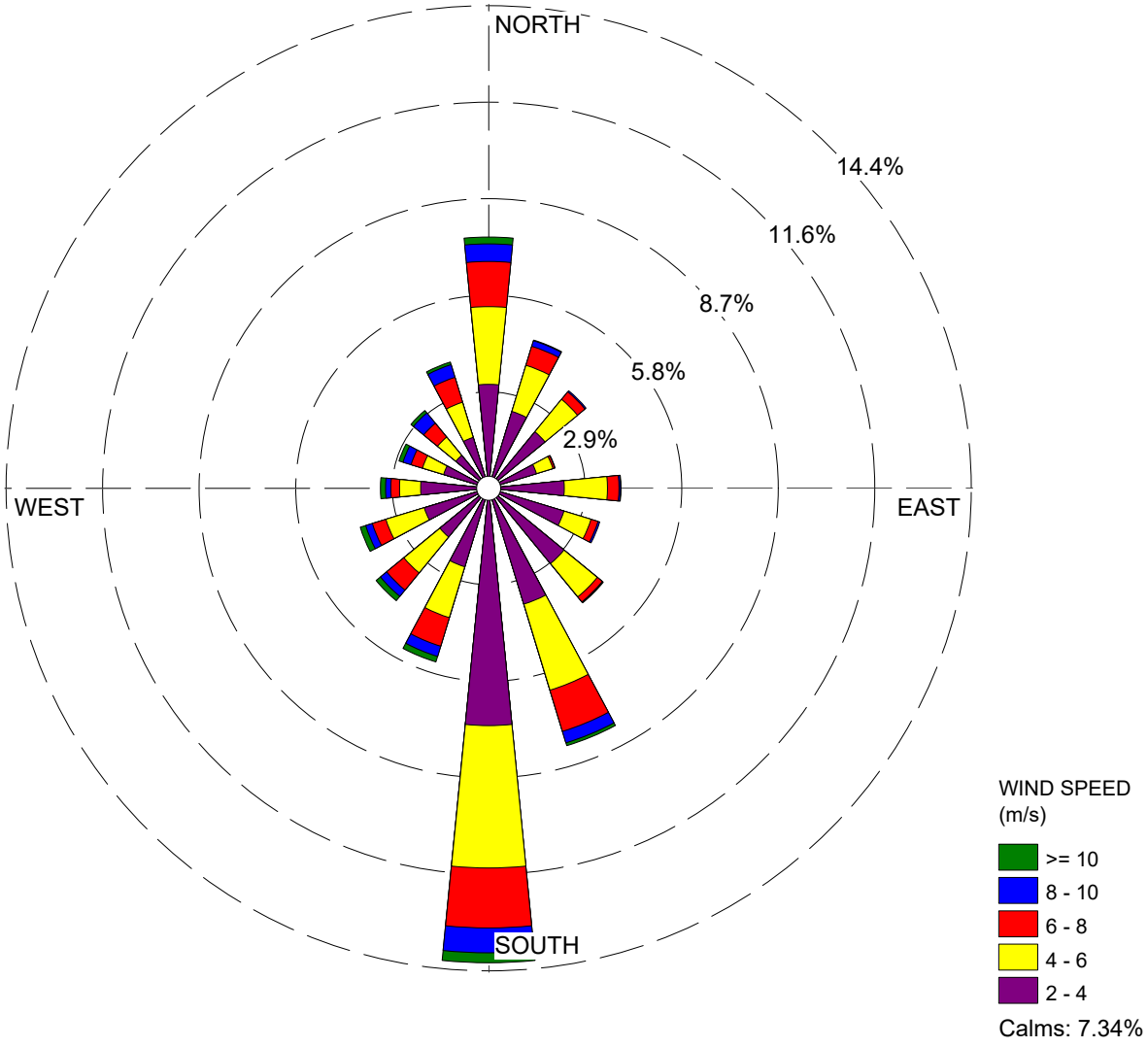
YYYY-MM-DD	2019-02-27
DESIGNED	RM
PREPARED	DBS
REVIEWED	MEM
APPROVED	RM

TITLE
FACILITY MAP

PROJECT NO. 18111727 REV. A 3

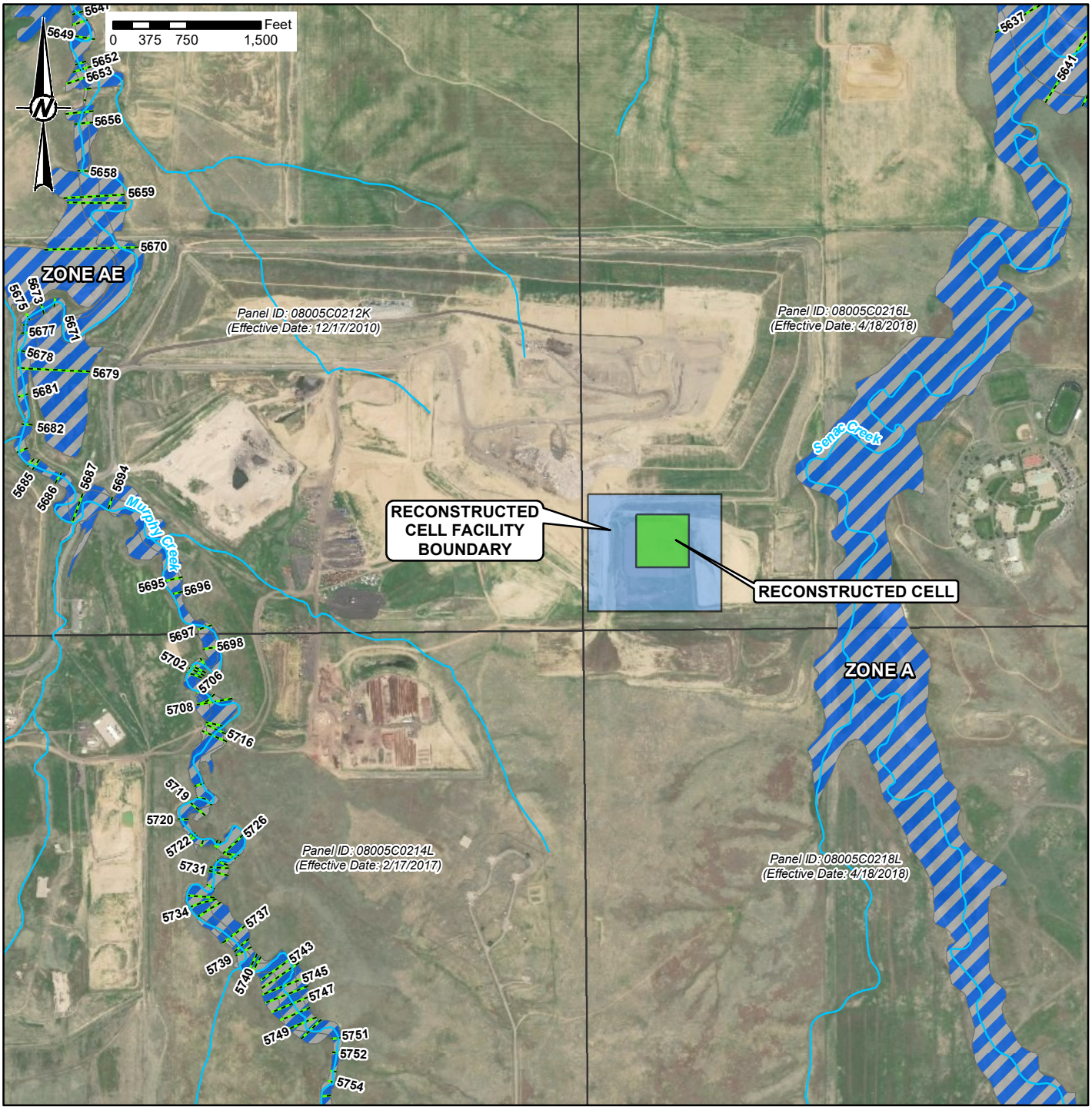
WIND ROSE PLOT:
Centennial Airport Wind Rose
Jan 1 - Dec 31, 2018

DISPLAY:
Wind Speed
Direction (blowing from)



PROJECT: **DACWPF RECONSTRUCTED CELL FACILITY PART B POST-CLOSURE PERMIT RENEWAL** TITLE: **SITE WIND ROSE DIAGRAM** February 26, 2019	DATA PERIOD: **2018** **Jan 1 - Dec 31** **00:00 - 23:00**	CLIENT: **WASTE MANAGEMENT OF COLORADO, INC.**	
		DESIGNED: MC PREPARED: MC REVIEWED: RM APPROVED: RM	GOLDER
	CALM WINDS: **7.34%**	TOTAL COUNT: **8757 hrs.**	
	AVERAGE WIND SPEED: **3.66 meters/second**	**FIGURE 4**	PROJECT NO.: **18111727**

WRPLOT View - Lakes Environmental Software



LEGEND

- RECONSTRUCTED CELL
- RECONSTRUCTED CELL FACILITY BOUNDARY
- STREAM
- BASE FLOOD ELEVATION (ft amsl)

FEMA FLOOD ZONE

- 100-YEAR FLOODPLAIN

NOTES

1. ZONE A = AN AREA INUNDATED BY 1% ANNUAL CHANCE FLOODING, FOR WHICH NO BASE FLOOD ELEVATIONSFES HAVE BEEN DETERMINED.
2. ZONE AE = AN AREA INUNDATED BY 1% ANNUAL CHANCE FLOODING, FOR WHICH BASE FLOOD ELEVATIONS HAVE BEEN DETERMINED.

REFERENCES

1. AERIAL IMAGERY: ESRI, DIGITAL GLOBE, VIVID. IMAGERY CAPTURED JUNE 2017.
2. FLOODPLAINS, BASE FLOOD ELEVATIONS, AND STREAMS: DIGITAL FLOOD INSURANCE RATE MAPS (DFIRMS), FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA). PANELS AND EFFECTIVE DATES LABELED ON MAP.

CLIENT
WASTE MANAGEMENT OF COLORADO, INC.

PROJECT
DACWPF RECONSTRUCTED CELL FACILITY
PART B POST-CLOSURE PERMIT RENEWAL

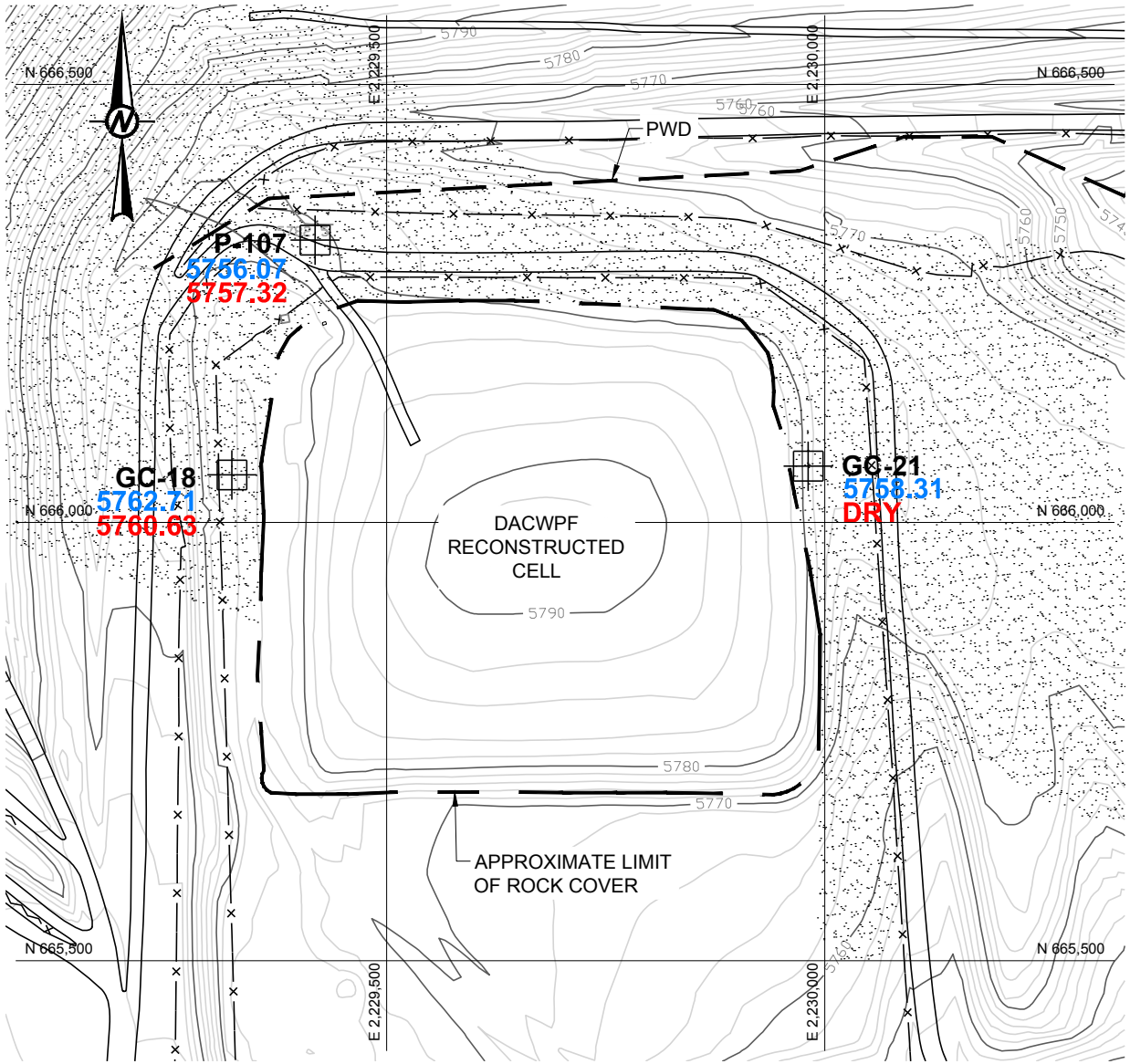
TITLE
FEMA FLOODPLAIN MAP

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-21
DESIGNED	KJC
PREPARED	KJC
REVIEWED	MC
APPROVED	

PROJECT NO.
18114678

FIGURE
5



LEGEND

- PIEZOMETER
- PERCHED WATER DRAIN (PWD)
- APPROXIMATE EXTENT OF SILTY SANDSTONE (SM) IN UPPER SANDSTONE UNIT

NOTE(S)

1. WATER LEVELS SHOWN IN *BLUE* MEASURED ON 05/09/2018.
2. WATER LEVELS SHOWN IN *RED* MEASURED ON 10/31/2018.
3. ELEVATION GIVEN IN FEET ABOVE MEAN SEA LEVEL.

0 100 200
1" = 200' FEET

CLIENT
WASTE MANAGEMENT OF COLORADO, INC.

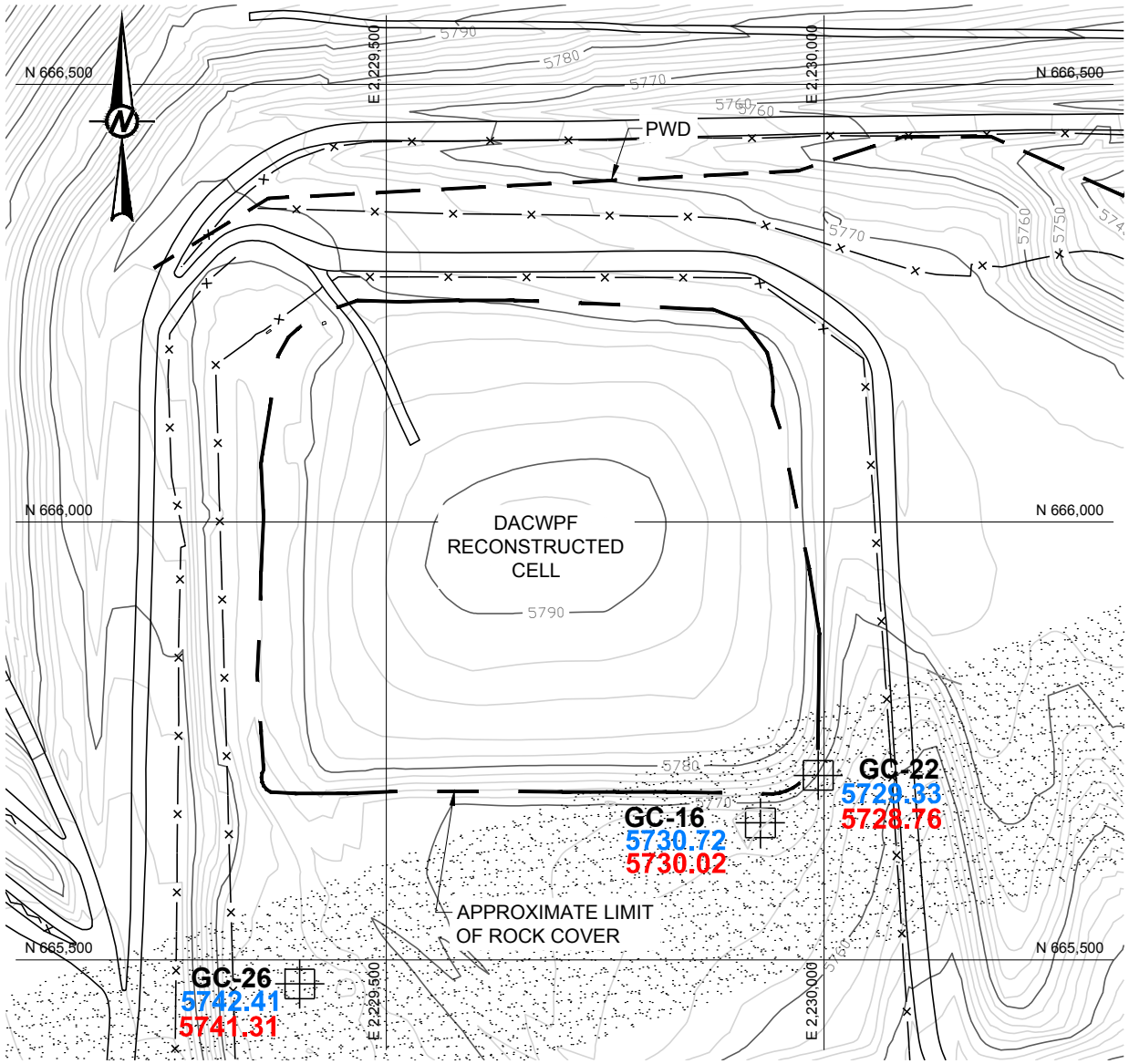
CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-27
DESIGNED	MDC
PREPARED	DBS
REVIEWED	MEM
APPROVED	RM

PROJECT
DACWPF RECONSTRUCTED CELL FACILITY
PART B POST-CLOSURE PERMIT RENEWAL

TITLE
GROUNDWATER MONITORING NETWORK AND WATER LEVELS IN UPPER SANDSTONE AND ADJACENT STRATIGRAPHIC UNITS

PROJECT NO. 18111727
REV. A



LEGEND

- PIEZOMETER
- PERCHED WATER DRAIN (PWD)
- APPROXIMATE EXTENT OF SILTY SANDSTONE (SM) IN INTERMEDIATE SANDSTONE UNIT

NOTE(S)

1. WATER LEVELS SHOWN IN *BLUE* MEASURED ON 05/09/2018.
2. WATER LEVELS SHOWN IN *RED* MEASURED ON 10/31/2018.
3. ELEVATION GIVEN IN FEET ABOVE MEAN SEA LEVEL.

0 100 200
1" = 200' FEET

CLIENT
WASTE MANAGEMENT OF COLORADO, INC.

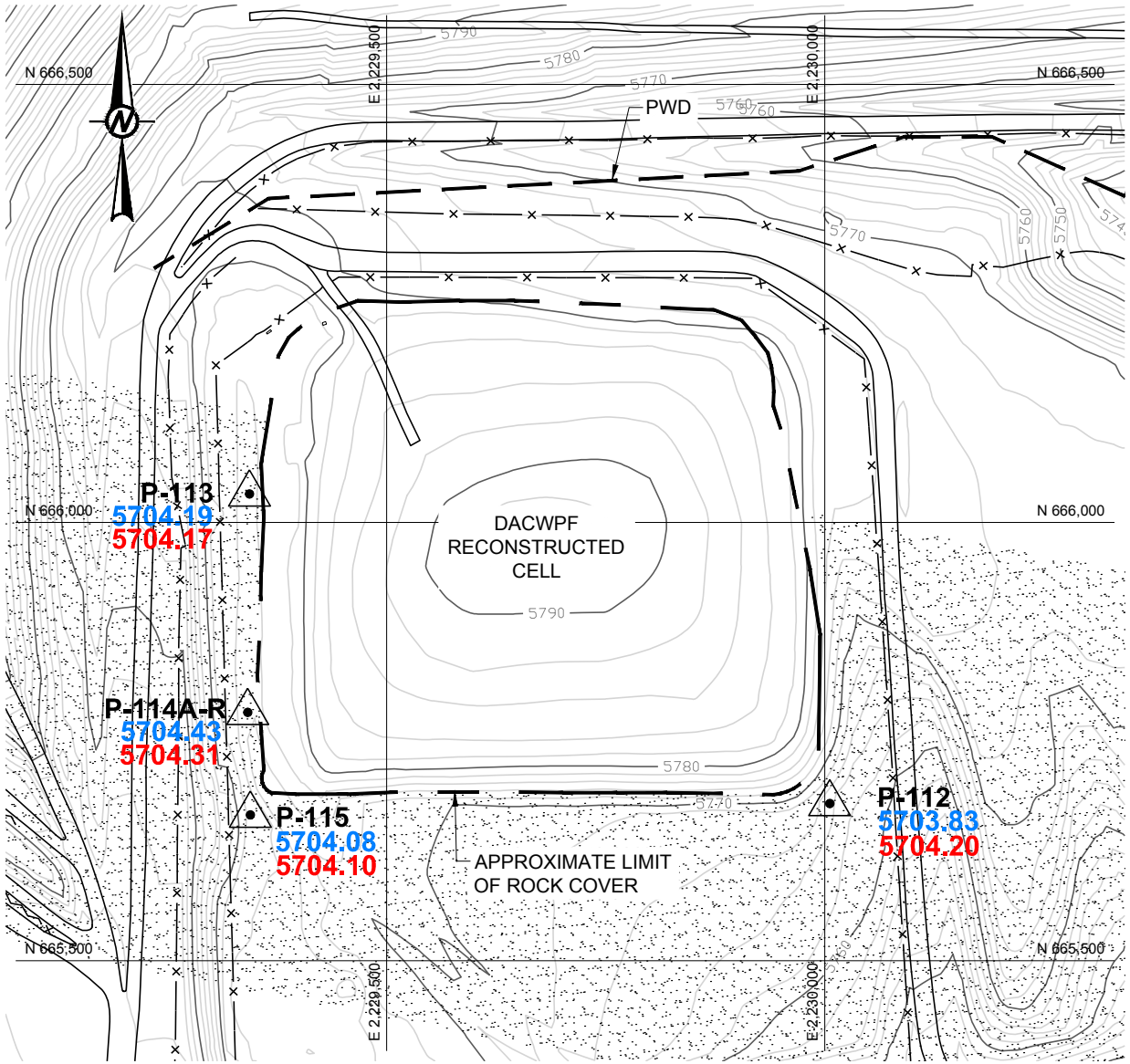
PROJECT
DACWPF RECONSTRUCTED CELL FACILITY
PART B POST-CLOSURE PERMIT RENEWAL

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-27
DESIGNED	MDC
PREPARED	DBS
REVIEWED	MEM
APPROVED	RM

TITLE
GROUNDWATER MONITORING NETWORK AND WATER LEVELS IN INTERMEDIATE SANDSTONE AND ADJACENT STRATIGRAPHIC UNITS

PROJECT NO. 18111727
REV. A



LEGEND

- PIEZOMETER
- PERCHED WATER DRAIN (PWD)
- APPROXIMATE EXTENT OF SILTY SANDSTONE (SM) IN LOWER SANDSTONE UNIT

NOTE(S)

1. WATER LEVELS SHOWN IN *BLUE* MEASURED ON 05/09/2018.
2. WATER LEVELS SHOWN IN *RED* MEASURED ON 10/31/2018.
3. ELEVATION GIVEN IN FEET ABOVE MEAN SEA LEVEL.

0 100 200
1" = 200' FEET

CLIENT
WASTE MANAGEMENT OF COLORADO, INC.

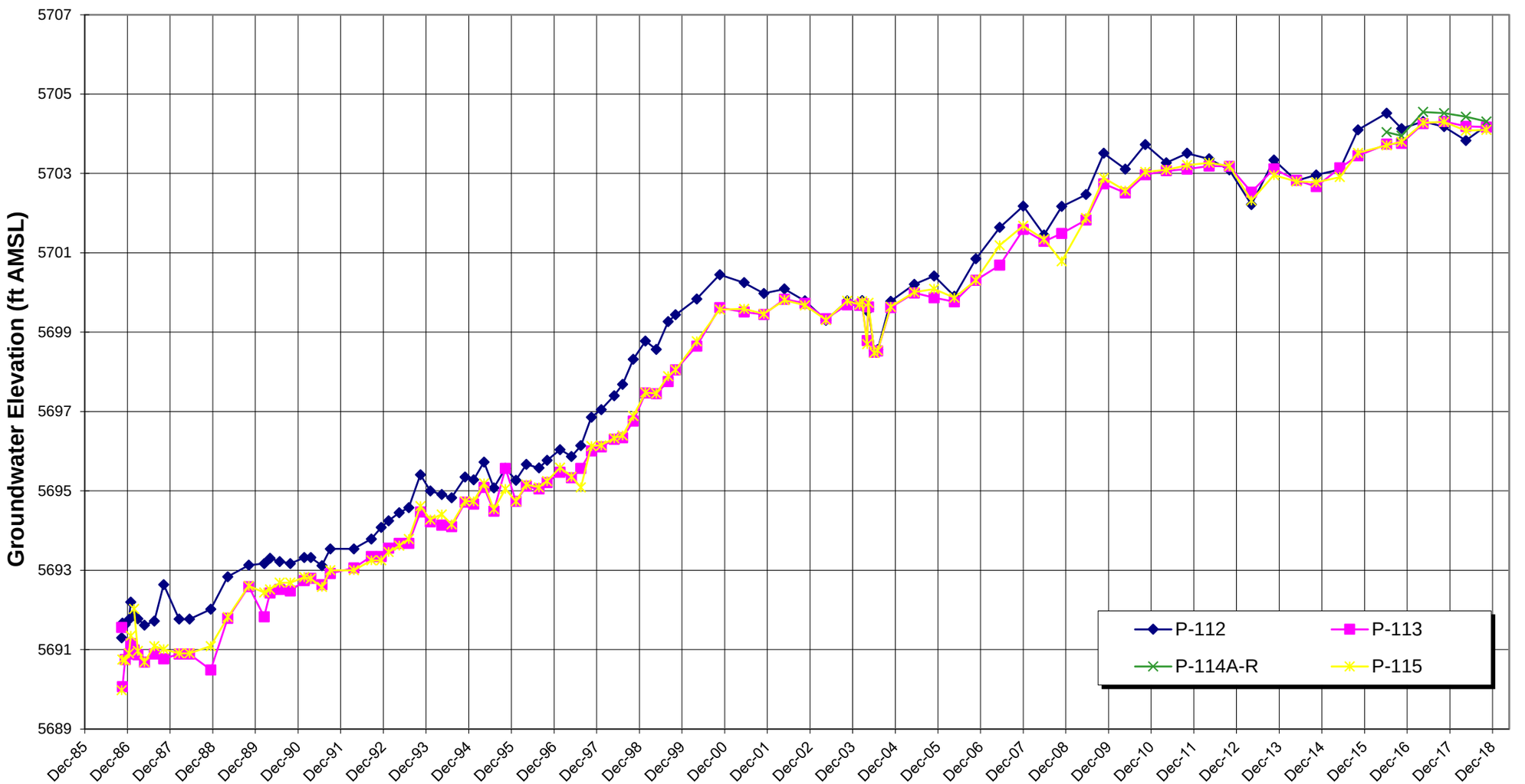
PROJECT
DACWPF RECONSTRUCTED CELL FACILITY
PART B POST-CLOSURE PERMIT RENEWAL

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-27
DESIGNED	MDC
PREPARED	DBS
REVIEWED	MEM
APPROVED	RM

TITLE
GROUNDWATER MONITORING NETWORK AND WATER LEVELS IN LOWER SANDSTONE AND ADJACENT STRATIGRAPHIC UNITS

PROJECT NO. 18111727
REV. A

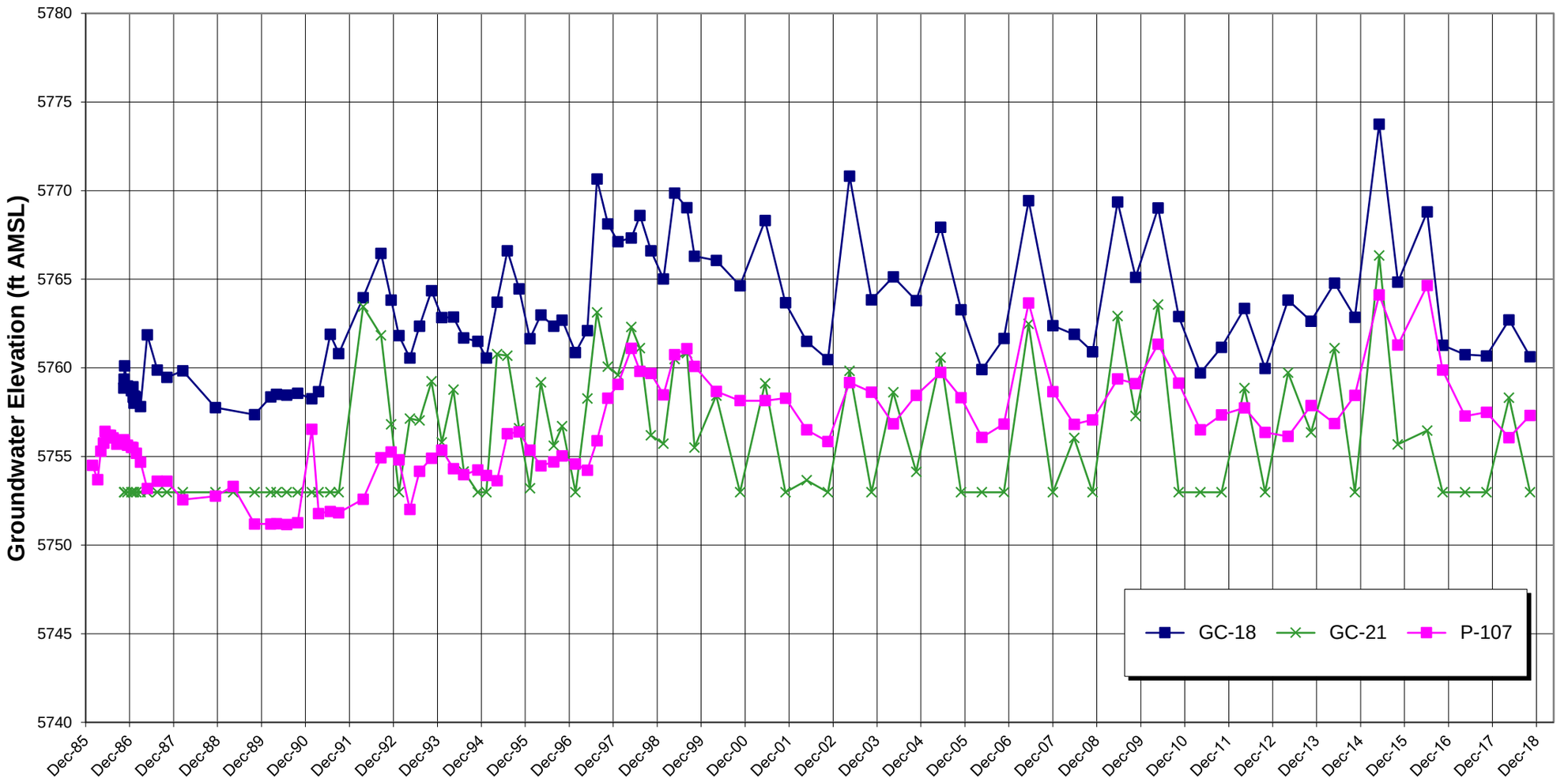


GOLDER
44 UNION BLVD. SUITE 300
LAKEWOOD, COLORADO 80228
PHONE: (303) 980-0540
FAX: (303) 985-2080

RCRA MONITORING WELLS (LOWER SANDSTONE)
GROUNDWATER LEVELS

DACWPF RECONSTRUCTED CELL FACILITY
PART B POST-CLOSURE PERMIT RENEWAL

Drawn	MC	February 25, 2019	18111727
Checked	SH	WASTE MANAGEMENT OF COLORADO, INC.	
Reviewed	RM		**FIGURE 9**



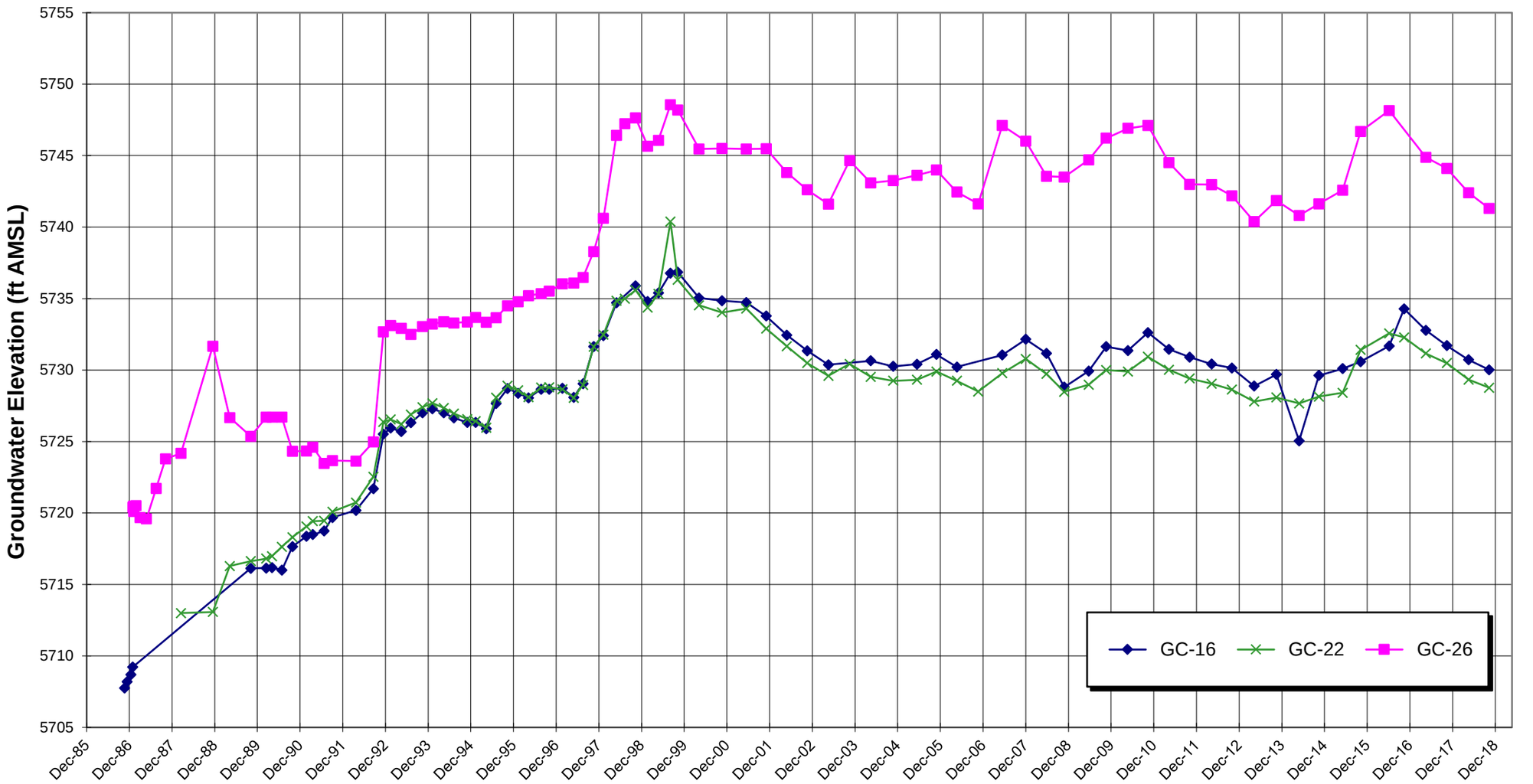
Note: GC-21 plotted at bottom of well elevation of 5753 ft amsl when dry.

GOLDER
44 UNION BLVD. SUITE 300
LAKEWOOD, COLORADO 80228
PHONE: (303) 980-0540
FAX: (303) 985-2080

UPPER SANDSTONE UNIT GROUNDWATER LEVELS

DACWPF RECONSTRUCTED CELL FACILITY
PART B POST-CLOSURE PERMIT RENEWAL

Drawn	MC	February 25, 2019	18111727
Checked	SH	WASTE MANAGEMENT OF COLORADO, INC.	
Reviewed	RM		**FIGURE 10**



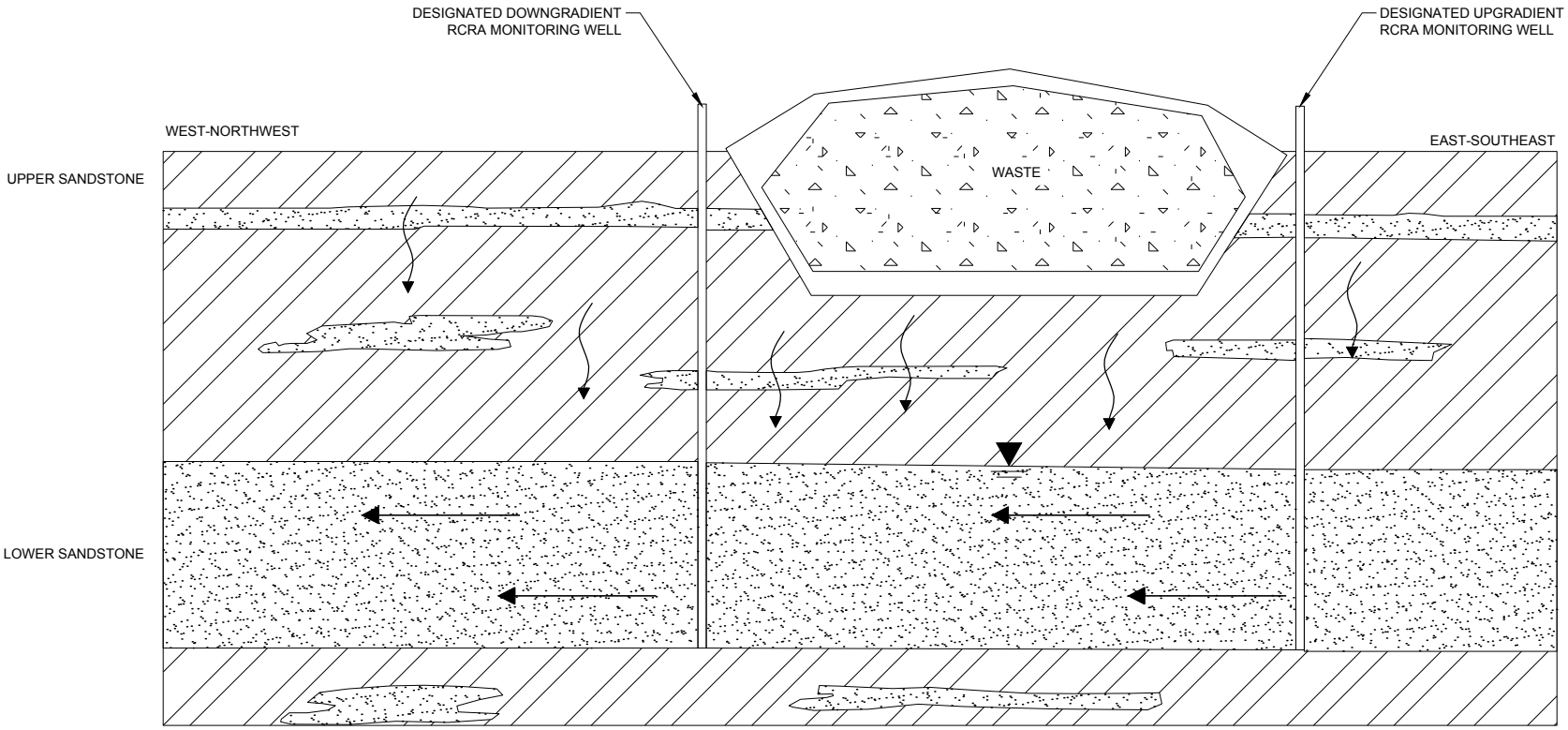
GOLDER
44 UNION BLVD. SUITE 300
LAKEWOOD, COLORADO 80228
PHONE: (303) 980-0540
FAX: (303) 985-2080

INTERMEDIATE SANDSTONE UNIT GROUNDWATER LEVELS

DACWPF RECONSTRUCTED CELL FACILITY
PART B POST-CLOSURE PERMIT RENEWAL

Drawn	MC	February 25, 2019	18111727
Checked	SH	WASTE MANAGEMENT OF COLORADO, INC.	
Reviewed	RM		**FIGURE 11**

Last Edited By: dsaunders Date: 2019-02-27 Time:11:05:05 AM | Printed By: dsaunders Date: 2019-02-27 Time:3:46:05 PM
Path: \\Denver\acad\WASTE MANAGEMENT\DACWPF\99_PROJECTS\18111727\100 RECONSTRUCTED CELL FACILITY\02_PRODUCTION\DWG\ | File Name: 18111727.100.012.dwg



LEGEND

- CLAYSTONE
- SANDSTONE
- WATER LEVEL
- SATURATED ZONE FLOW DIRECTION
- UNSATURATED ZONE FLOW DIRECTION

NOTE(S)

1. INTERMEDIATE SANDSTONE AS DESCRIBED IN GOLDER (1986) EXISTS ONLY BENEATH THE SOUTH-EASTERN CORNER OF THE RECONSTRUCTED CELL AND IS NOT DEPICTED IN THIS CROSS SECTION.

CLIENT
WASTE MANAGEMENT OF COLORADO, INC.

PROJECT
DACWPF RECONSTRUCTED CELL FACILITY
PART B POST-CLOSURE PERMIT RENEWAL

CONSULTANT
GOLDER

YYYY-MM-DD	2019-02-27
DESIGNED	RM
PREPARED	DBS
REVIEWED	MEM
APPROVED	RM

TITLE
SCHEMATIC HYDROGEOLOGIC CROSS SECTION

PROJECT NO. 18111727
REV. A

Attachment A-2

2015 Class 1 Permit Modifications

COLORADO
Department of Public
Health & Environment

Dedicated to protecting and improving the health and environment of the people of Colorado

May 26, 2015

Mr. Tom Schweitzer, P.E.
Engineering Manager
Waste Management of Colorado
2400 W. Union Avenue
Englewood, CO 80110

Subj: Class 1 Permit Modification Request
DACWPF Reconstructed Cell Facility, Arapahoe County, CO
State RCRA Permit #CO-09-30-09-01

Dear Mr. Schweitzer,

The Hazardous Materials and Waste Management Division ("the Division") of the Colorado Department of Public Health and Environment has reviewed the Class 1 Modification Request dated May 18, 2015 and received by the Division on May 19, 2015 by email. The Division approves the Modification Request as submitted and the changes have been incorporated into the permit. A copy of the modifications shall be sent by the Facility to all persons on the current mailing list pursuant to 100.63(a)(1)(ii).

If you have any questions or need additional information, please contact me at 303-692-3310 or by email at charles.adams@state.co.us.

Best Regards,

Charles Adams, CPG
Hazardous Waste Corrective Action Unit
Solid & Hazardous Waste Program

ec:
Tom Butts, Director of Environmental Health, Tri-County Health Department
Rob Beierle, CDPHE/HMWMD

Class 1 Permit Modification Request
May 18, 2015

WASTE MANAGEMENT

2400 West Union Avenue
Englewood, CO 80110
303-914-1445 (Phone)
866-442-0285 (Fax)

May 19, 2015

Sent by UPS Overnight

Mr. Charles Adams
Colorado Department of Public Health and Environment
Hazardous Materials and Waste Management Division
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

SUBJECT: CLASS I MODIFICATIONS
DACWPF RECONSTRUCTED CELL FACILITY (DACWPF)
EPA ID NO. COD000695007
PERMIT NO. CO-09-30-09-01

Dear Mr. Adams:

Waste Management of Colorado, Inc. (WMC) is implementing certain Class I modifications to the above-referenced permit pursuant to §100.63(a) of the Colorado Hazardous Waste Regulations, 6 CCR 1007-3 (Regulations).

Modification 1

The first modification pertains to the emergency coordinator contacts on page 4 of 7 of Attachment 6 (Preparedness, Prevention, and Contingency Plan), consisting of a telephone number change for the Emergency Coordinator and a change in the Alternate Emergency Coordinator.

Page 4 of 7 has been accordingly updated and is enclosed for insertion into the permit. For your convenience, a version showing the edits is also enclosed.

Modification 2

The second modification pertains to placement of a soil stockpile on the DACWPF property outside of the fenced enclosure of the DACWPF Reconstructed Cell. The source of the soil would be excavation from new disposal cell construction at the adjacent Denver Arapahoe Disposal Site (DADS). As shown in the attached drawing the stockpile would be located east of the fenced enclosure of the Reconstructed Cell and south of Ditch A. Accordingly, the proposed location would be away from the Reconstructed Cell, facility groundwater monitoring wells and piezometers, primary/secondary leachate sump access points and permanent survey benchmarks.

The proposed stockpile may remain at this location for an extended period, and may be permanent. We propose a maximum slope of 3H to 1V and a minimum setback of 50 feet from the fenced enclosure of the facility. Silt fences and/or straw wattles as well as other erosion control measures would be employed as necessary until vegetation on the stockpile is established. Grading would be performed in a manner to prevent runoff from the stockpile from draining onto the fenced enclosure of the facility.

Following your concurrence with the modifications, they will be sent to all persons on the current facility mailing list pursuant to §100.63(a)(1)(ii) of the Regulations.

Please call me at 303-914-1445 if you have questions about these Class I modifications.

Sincerely,

Tom Schweitzer, P.E.
Senior Engineer

Enclosures

cc: Warren Brown, Tri-County Health
Terry Brown, USEPA
Gene Riordan, Vranesh and Raisch
Steve Richtel, Waste Management
Christopher Gibbs, Waste Management
Doc Nyiro, Waste Management

DACWPF RECONSTRUCTED CELL FACILITY

CLASS I MODIFICATIONS

MAY 19, 2015

MODIFICATION 1

The names, addresses, and telephone numbers of the EC and his/her alternates and agencies that might be notified are listed as follows:

Mr. Doc Nyiro: Emergency Coordinator
Denver Arapahoe Disposal Site
3500 S. Gun Club Road
Aurora, Colorado 80018
(720) 876-2621 (office)
~~(800) 882-3149 (after hours)~~(303) 944-7526 (cell)

Mr. ~~Jason Chan~~Christopher Gibbs: Alternate Emergency Coordinator
Denver Arapahoe Disposal Site
3500 S. Gun Club Road
Aurora, Colorado 80018
~~(303) 468-6040~~(720) 876-2633 (office)
~~(303) 5498-1790~~(303) 961-8084 (cell)
~~(800) 882-3149 (after hours)~~

2.2 Incident Assessment

The EC, or his/her representative, will immediately identify to the extent possible the character, exact source, amount, and areal extent of any released materials by observation, records review, and, if necessary, chemical analysis. While characterizing the release, the EC will assess possible direct and indirect hazards to human health and the environment that may result from the release. Based on a visual inspection of the release and reference to data sources, the EC will assess the following:

- Could the event threaten human health or the environment? Ifso, the Contingency Plan will be implemented.

- Can personnel control the emergency? If not, the EC will immediately notify the appropriate federal, state, and local agencies to request assistance.

No scenarios that would require evacuation of the facility or the surrounding area are envisioned.

3.1 IMPLEMENTATION OF CONTINGENCY PLAN

When the decision has been made to implement the Contingency Plan, the EC (or his/her designee) will immediately notify the following:

- Facility personnel, if they have not already been notified;

- The National Response Center (NRC) at (800) 424-8802 and report the following information:

DACWPF RECONSTRUCTED CELL FACILITY

CLASS I MODIFICATIONS

MAY 19, 2015

MODIFICATION 2

2229500 E
2230000 E
2230500 E
2231000 E
666500 N
666000 N
665500 N

DACWPF RECONSTRUCTED CELL PROPERTY BOUNDARY

DACWPF PERCHED WATER DRAIN AND DITCH "A" ALIGNMENT

DITCH A

10056
5777.31
BM-2A

P-107

GC-18

P-113

GC-21

P-114A

PROPOSED RANDOM SOILS STOCKPILE

DACWPF RECONSTRUCTED CELL PROPERTY BOUNDARY

P-112

GC-16

GC-22

P-115

DACWPF RECONSTRUCTED CELL PROPERTY BOUNDARY

DITCH B

GC-26

FENCED ENCLOSURE CONTAINING THE DACWPF RECONSTRUCTED CELL, GROUND WATER MONITORING WELLS, PIEZOMETERS AND FACILITY BENCH MARKS

BM-1
9332
5796.96

10057
5785.82
BM-1A

DACWPF RECONSTRUCTED CELL PROPERTY BOUNDARY

N

TRUE NORTH

NOTES:
1. ACTUAL STOCKPILE CONFIGURATION MAY VARY, BUT WILL NOT EXCEED THE LIMITS, AND SLOPE GRADES DEPICTED ABOVE.
2. SILT FENCES AND / OR STRAW WATTLES WILL BE INSTALLED AND MAINTAINED AROUND THE STOCKPILE UNTIL VEGETATION IS ESTABLISHED.
3. A DITCH WILL BE CONSTRUCTED ALONG THE WEST SIDE OF THE STOCKPILE TO DIRECT DRAINAGE AWAY FROM DACWPF.

COLORADO REGISTERED
SEBASTIAN THOMAS TILDEN
24176
5/19/15
PROFESSIONAL ENGINEER

75 0 75 150 225
SCALE IN FEET

WASTE MANAGEMENT

Revisions			
No.	Description	Date	By

Approved By:	TSS
Checked By:	TSS
Drawn By:	DLH

Project Location:
DENVER ARAPAHOE DISPOSAL SITE
AURORA, COLORADO

PROPOSED DACWPF STOCKPILE

Drawing:	Proposed DACWPF Stockpile v1.dgn
Scale:	As Shown
Date:	FEBRUARY 2015
Sheet Number:	1

DRAWING FILE: Proposed DACWPF Stockpile ver 1.dgn
PLOT DATE: 5/19/2015 , 7:53:54 AM

Attachment A-3

2016 Class 1 Permit Modification

COLORADO
Department of Public
Health & Environment

Dedicated to protecting and improving the health and environment of the people of Colorado

May 13, 2016

Mr. Tom Schweitzer, P.E.
Engineering Manager
Waste Management of Colorado
2400 W. Union Avenue
Englewood, CO 80110

RE: 2015 Annual Groundwater Report - February 29, 2016
DACWPF Reconstructed Cell Facility, Arapahoe County, CO
State RCRA Permit #CO-09-30-09-01
HMWMD File No: DAC PER 2.2

Dear Mr. Schweitzer,

The Hazardous Materials and Waste Management Division ("the Division") of the Colorado Department of Public Health and Environment has completed reviewing the 2015 annual Groundwater Monitoring Report for the DACWPF site. The report presents the results of both groundwater monitoring and leachate monitoring performed in 2015. As concluded in the report, the Division agrees that the elevated pH in monitoring well P-114a indicates that the physical integrity of the well may be compromised such that monitoring results from the well may be unrepresentative of groundwater conditions. According to Part 100 Appendix I of the Colorado Hazardous Waste Regulations, replacing an existing well without changing the location, design or depth is a Class 1 Modification. Thank you for notifying us prior to implementation. Please replace the well as you have proposed. If you have any questions regarding this letter, please contact me at 303-692-3368 or by email at robert.beierle@state.co.us .

Sincerely,

Robert Beierle
Hazardous Waste Corrective Action Unit
Hazardous Waste Program

cc: Tom Butts, Tri-County Health Department

SWIFT RIVER
ENVIRONMENTAL SERVICES, LLC
An Alaska Native Corporation
26 West Dry Creek Circle, Suite 470 ♦ Littleton, CO 80120 ♦ 303-695-4660

October 18, 2016 S162063

Denver Arapahoe Chemical Waste Processing Facility (DACWPF)
Waste Management of Colorado, Inc.
2400 West Union Avenue
Englewood, CO 80110

Attention: Tom Schweitzer
Site Engineer

RE: Installation of Replacement Well P-114A-R and Abandonment of Well P-114A
DACWPF Reconstructed Cell Facility
DADS Landfill, Aurora, Colorado

Dear Mr. Schweitzer:

Swift River Environmental Services, Inc. (Swift River) is pleased to provide this summary report and work products for the installation and completion of new replacement well P-114A-R, and abandonment of former well P-114A at DACWPF. This work was performed between July 11 and 14, 2016, under the work plan approved by Colorado Department of Public Health and Environment (CDPHE), Corrective Action Unit, on June 23, 2016 and under our scope of work dated March 4, as authorized by Waste Management of Colorado, Inc. (WMC) on June 21, 2016.

Background for the Replacement Well Purpose, Location, and Installation

Field parameters measured at well P-114A during the second half 2015 well purging and sampling activities showed anomalously high pH levels. A downhole camera survey showed evidence of fluid movement and precipitate formation above groundwater level within the well casing and suspended material in groundwater. These conditions suggested that a well integrity issue might be the cause of the observed anomalies. Based on these observations, it was determined that well P-114A could not produce reliable groundwater samples and the well should be replaced. The well integrity concern was presented in the 2015 Annual Groundwater Report submitted to CDPHE on March 1, 2016. Along with that determination, the report recommended replacement of well P-114A in order that representative groundwater samples could be obtained as required by the Post-Closure Care Permit. In a letter dated May 13, 2016, CDPHE agreed that the physical integrity of the well might have been compromised and that the well should be replaced.

WMC obtained CDPHE approval of the replacement well work plan in a June 23 email, including approval of the replacement well location and construction details. The new well

was installed and ready for sampling on July 28. CDPHE agreed in a June 24 email that the July sampling field and laboratory analytical data could be considered as part of the first half 2016 sampling event.

Well P-114A-R was drilled, installed, and developed in general accordance with the approved work plan, as follows.

Preparation

- A qualified driller, Drilling Engineers, Inc. (DEI) of Fort Collins, Colorado, was retained to advance the soil boring, obtain soil samples for lithologic description, and install and develop well P-114A-R and abandon well P-114A.
- Notice of Intent (NOI) to Construct Monitoring Hole(s) (Form GWS-51, 3/2013) was filed with the Colorado Office of the State Engineer (OSE), and was approved by the OSE on June 17, 2016. A copy of this form is included in **Attachment 1**.
- A site-specific Health and Safety Plan (HASP) was prepared. Work was performed using Level D personal protective equipment (PPE), including hard hats, gloves, safety glasses, hearing protection, and steel-toed boots. Field personnel were required to have 40-hour OSHA HAZWOPER training and current 8-hour training update certificates.
- The UNCC "one-call" utility locating service was called on June 16. Responses from utilities were received between June 16 and 20, 2016.

Well Installation

- The well installation work was performed between July 11 and 14, 2016, in accordance with the following:
    - Waste Management "Typical Monitor Well/Piezometer Construction Standard," January 2002, v. 6.2.
    - Waste Management "Groundwater Monitor Well Construction Standard (Submerged Screen)" (schematic).
    - Waste Management "Monitor Well/Piezometer Development Standard," September 2000.
    - Waste Management "Well/Piezometer Decommissioning Standard."
    - Colorado Office of the State Engineer, State Board of Examiners of Water Well Construction and Pump Installation Contractors, Water Well Construction Rules, 2 CCR 402-2, effective January 1, 2005, and revisions effective September 1, 2016.
- DEI, under the direct supervision of a Swift River hydrogeologist, drilled and installed well P-114A-R at a location that is northeast of former well P-114A and approximately 20 feet closer to the waste area/rock cover of the reconstructed cell.
- On July 11, the soil boring that was completed as well P-114A was drilled to a depth of 99.0 feet below ground surface (bgs) using the hollow-stem augering method by a

CME 75 truck-mounted rig. Continuous soil samples were collected from ground surface to total depth for lithologic description and to identify the top of the target water-bearing sand stratum (Lower Sandstone). Continuous samples were collected in four or five-feet long intervals from 0 to 39 feet below ground surface (bgs) in relatively soft subsurface material that was fine-grained sand, silt, and clay; in 2.5-feet intervals from 39 to 84 feet bgs in relatively harder material that was fine-grained sand, silty sand, silt, clay, and claystone; and in one foot, four-feet, and five-feet intervals from 84 to total depth in hard and moist material that was loose to dense, fine-grained sand with occasional one-foot thick intervals of indurated sandstone. The top of the Lower Sandstone was encountered at 85 feet bgs. With the exception of two inches of saturated silt observed at 50 feet bgs, the subsurface material in the continuous sample barrel was dry above 85 feet bgs.

- On July 12, the depth to water inside the augers was 10.2 feet bgs. After flushing the augers, groundwater entered at the bottom of the borehole at a rate of approximately 0.6 feet per minute. Based on this confirmation of adequate recharge from the Lower Sand, the well was completed with a slotted PVC well screen set between 98 to 88 feet bgs and blank PVC pipe from 88 feet bgs to 3.1 feet above ground surface (stickup). The PVC pipe was two-inch inner-diameter Schedule 40 with threaded joints and "O" ring seals. Sand was placed around the screen, using a tremie pipe, from total depth to 84 feet, which is four feet above the top of the screen. A bentonite chip seal was set from 84 to 80 feet bgs in the annulus between the PVC casing and the borehole wall and hydrated by groundwater present within the well.

  Water pumped from the borehole, augers, and well during installation was containerized and handled in the same manner as DACWPF leachate. It was used for dust control at the DADS Subtitle D landfill and applied to areas with base liner at a rate to minimize ponding. The application area is located away from public travel and the active disposal areas.

- On July 13, the depth to water inside the well had stabilized to approximately 72.6 feet bgs. Grout was placed by side-discharging tremie pipe into the annulus between the PVC well and the outside of borehole to 4 feet bgs.

- On July 14, the surface protection for the well was constructed. The surface completion included a new, six-inch diameter, seven-feet long, unpainted, protective steel surface casing that extended from 3.5 feet bgs to 3.5 feet above ground. Concrete was poured from the top of grout at 4 feet bgs, both inside the steel casing and between the steel casing and the borehole wall, to form the upper annual seal and to form the concrete surface pad to stabilize the surface protective pipe. The four-inch thick well pad was constructed inside a four feet by four feet wood form. The annulus between the steel casing and PVC pipe was filled with bentonite chips to approximately six inches above ground surface. The remaining annular space was filled with sand to a height of approximately two inches below the top of PVC casing. A ¼-inch weep hole was drilled into the protective casing at approximately six inches above ground surface, at the bentonite/sand interface. Four bollards were installed at the corners of the concrete pad. The bollards were four-inch diameter steel pipes filled with concrete. The bollards were installed approximately 3 feet below ground

and extend approximately 4 feet above ground surface. The bollards had been painted bright yellow prior to being transported to the site for installation.

- Swift River completed a soil boring log for the new well. The boring log includes total depth, sample depth, geologic description and/or Unified Soil Classification System (USCS) description, and well completion details. Well location survey information provided by WMC, including top of PVC casing elevation, ground surface elevation, and northing/easting coordinates, are included on the boring log. The soil boring log is included as **Attachment 2**.

- Swift River filed the Well Construction and Test Report (Form GWS-31, 04/2012) and Monitoring/Observation Water Well Permit Application (Form GWS-46, 11/2012) with the OSE, in an email dated September 12, 2016. Copies of these forms are included as **Attachment 3**. OSE requires a new permit to be issued for well P-114A-R because the permit number associated with original well P-114 cannot be re-assigned.

Well Development

- Well P-114A-R was developed on July 14. A copy of the development form is included in **Attachment 4**. The depth to water in P-114A prior to well development was 75.95 feet below top of casing (TOC) and total well depth was measured at 101 feet below TOC. Ten wellbore volumes of water (approximately 43 gallons) were removed during development by surging and pumping. During well development, the groundwater level dropped by approximately 23.25 feet. Development continued until water-quality parameters (specific conductivity, temperature, and pH) stabilized within 10 percent over the two-hour interval of well development.

  Development water was containerized and handled in the same manner as DACWPF leachate. It was used for dust control at the DADS Subtitle D landfill and applied to areas with base liner at a rate to minimize ponding. The application area is located away from public travel and the active disposal areas.

Pump Installation

- A new QED low-flow sampling pump and tubing (air displacement and water discharge) was installed prior to sampling. The pump is 3.5 feet long with a 395 milliliter bladder. The pump is suspended in the well with the pump inlet (sample collection point) at approximately 98 feet below TOC. This places the pump intake approximately two feet below mid-screen. The pump was installed on July 27, one day prior to purging and sampling on July 28.

Construction Water Sample Results

- WMC DADS Landfill provided the drilling contractor with water to clean tools and continuous sampler barrels between use downhole and to prepare grout and cement. This construction water was obtained from the DADS water supply ECCV, which is East Cherry Creek Valley Water & Sanitation District treated water supplied to DADS

and accessed by a hydrant located at the south end of the DADS office trailers. The water was collected in a previously cleaned water tank on the drill rig and also in a previously cleaned water tank on the supply trailer. The drilling contractor transported the water to DACWPF in the rig and supply trailer tanks. A sample of the construction water from the rig tank, designated "Rig Water," was obtained by Swift River on July 12, 2016 and submitted for laboratory analysis for volatile organic compounds (VOCs), per WM's "Typical Monitor Well/Piezometer Construction Standard." The following VOCs were detected between 6.4 and 11 micrograms per liter (µg/L), and above Reporting Limits (RLs): bromodichloromethane, bromoform, and dibromochloromethane, which are trihalomethanes (THMs). THMs are disinfection by-products found in public water supplies and are not unexpected in the construction water sample. In drinking water, the total of all THMs combined cannot exceed the regulatory limit of 80 µg/L.

Swift River recommends that the laboratory analytical results be retained in the DACWPF files should THMs be detected in future water analyses from well P-114A-R. A copy of the laboratory report of construction water is included in **Attachment 5**.

Abandonment of Well P-114A

- On July 14, former well P-114A was abandoned in accordance with Colorado Water Well Construction Rules. Prior to well abandonment, the water level was measured at a depth of 77.71 feet below TOC. Sand was placed inside the two-inch diameter PVC well across the screen from total well depth to 75 feet below TOC. Grout was placed in the well above the sand to a depth of one foot below TOC. The metal protective cover was pulled directly upward and out of the ground. The top 10-feet long section of PVC blank pipe snapped off at a joint and was removed from the ground. The upper four feet of open hole was filled with surface soil and manually compacted.

- As requested by Mr. Doug Stephenson, OSE Chief Well Inspector, Swift River completed but did not file a Well Abandonment Report (Form GWS-09, 4/2012) with the OSE. In a telephone and email exchange with the OSE, Mr. Stephenson directed Swift River to retain the Well Abandonment Report in "our" records, should future inquiries be made about well P-114A, but to not file a well abandonment report. The reasons for OSE's request include: OSE does not have a well abandonment record of the original well P-114; OSE does not have any records of well P-114A having been drilled; and well P-114A was drilled by "others" but abandoned by Swift River on WMC's behalf. A copy of the well P-114A abandonment report form for WMC's records is included as **Attachment 6**.

We appreciate WMC consideration of Swift River's services for DACWPF, specifically to assist with this well installation and abandonment task. If you have any questions, please contact us by telephone at (303) 695-4660 or by email to Cathryn.Stewart@SwiftRiverES.com or Steve.Wampler@SwiftRiverES.com.

Sincerely,
Swift River Environmental Services, LLC

Cathryn Stewart, P.G.
Project Manager

Stephen Wampler, P.E.
General Manager

Attachments

Attachment 1 Copy of Notice of Intent to Construct (Form GWS-51, 3/2013)
Attachment 2 Soil Boring Record and Well Completion Details
Attachment 3 Copies of Well Construction and Test Report (Form GWS-31) with attached boring log, and Monitoring/Observation Water Well Permit Application Form (GWS-46)
Attachment 4 Record of Well Development
Attachment 5 Laboratory Analytical Results of Construction Water
Attachment 6 Copy of Well Abandonment Report (Form GWS-09) (not submitted to OSE but to be retained in WMC files)

cc: Lou Bull, WM (e-copy)
Doc Nyiro, WMC (e-copy)
Steve Richtel, WMC (e-copy)

ATTACHMENT 1

COPY OF NOTICE OF INTENT TO CONSTRUCT (FORM GWS-51, 3/2013)

GWS-51
3/2013

NOTICE OF INTENT TO CONSTRUCT MONITORING HOLE(S)

RECEIVED
JUN 17 2016
WATER RESOURCES
STATE ENGINEER COLO

Please type or print legibly in black or blue ink or file online @ dwrpermitsonline@state.co.us
COLORADO DIVISION OF WATER RESOURCES-1313 SHERMAN ST-STE 821-DENVER-CO-80203
PHONE: 303-866-3581---FAX: 303-866-3589 WEB: www.water.state.co.us

Well Owner Name(s): Waste Management of Colorado, Inc.
Address : 2400 West Union Ave., Englewood, CO 80110
Phone (area code & no.): 303-914-1445
Landowner's Name: Waste Management of Colorado, Inc.

Please check one and complete as indicated including contact info:

☐ Water Well Driller Licensed in Colorado – Lic. No. _____

☐ Professional Engineer Registered in Colorado – Reg. No. _____

■ Professional Geologist per CRS 34-1-201(3)

☐ Other -anyone directly employed by or under the supervision of a licensed driller, registered professional engineer or professional geologist

Contact / Company Cathryn Stewart/Swift River Environmental Sv
Address 26 West Dry Creek Circle, Ste . 470
City, State & Zip Littleton, CO 80120
Phone 303-895-4660 Fax 720-524-8577

Print Name: Cathryn Stewart
Sign or enter full name here: Cathryn Stewart

Location: NW ¼ SE ¼, Section 32
Township 4 ☐N ☒S, Range 65 ☐E ☒W, 6th PM
County Arapahoe County
Subdivision: _____
Lot: _____ Block: _____ Filing Unit: _____
Site/Property Address 3500 South Gun Club Road
Aurora, CO 80018

GPS Location in UTM format (optional):
Set GPS unit to true north, datum NAD83, and use meters for the distance units, ☐ Zone 12 or ☐ Zone 13.
Easting _____ Northing _____

# of Monitoring Hole(s) to be constructed: 1
Estimated Depth 90 **Ft., Aquifer** Lower Sandstone
Purpose of Monitoring Hole(s) To monitor shallow groundwater. Replacement well for ~~P-1141A.~~ P-114A
CRS, 6/17/16
Anticipated Date of Construction (mm/dd/yyyy) 06/21/2016

Date Notice Submitted (mm/dd/yyyy): 06/16/2016
(Must be at least 3 days prior to construction)

ACKNOWLEDGEMENT FROM STATE ENGINEER'S OFFICE
FOR OFFICE USE ONLY

055525 - MH PROCESSED BY [signature]

Div. 1 WD 2 BAS _____ MD _____ DATE ACKNOWLEDGED 6/17/16

CONDITIONS OF MONITORING HOLE ACKNOWLEDGEMENT

A COPY OF THE WRITTEN NOTICE OR ACKNOWLEDGEMENT SHALL BE AVAILABLE AT THE DRILLING SITE .

1) **Notice was provided to the State Engineer at least 3 days prior to construction of monitoring & observation hole(s).**
2) **Construction of the hole(s) must be completed within 90 days of the date notice was given to the State Engineer.** Testing and/or pumping shall not exceed a total of 200 hours unless prior written approval is obtained from the State Engineer. Water diverted during testing shall not be used for beneficial purposes. The owner of the hole(s) is responsible for obtaining permit(s) and complying with all rules and regulations pertaining to the discharge of fluids produced during testing.
3) **All work must comply with the Water Well Construction Rules, 2 CCR 402-2.** Minimum construction standards must be met or a variance obtained. Standard permit application and work report forms, including online filing instructions, are found on the DWR website at http://www.water.state.co.us. **Well Construction and Test Reports (GWS-31)** must be completed for each hole drilled. The licensed contractor or authorized individual must submit the completed forms to this office within 60 days of monitoring hole completion.
4) **Unless a well permit is obtained, or variance approved, the hole(s) must be plugged and sealed within one (1) year after construction. An Abandonment Report (form GWS-9) must be submitted within 60 days of plugging & sealing.** The above MH acknowledgement number, owner's structure name, and owner's name and address must be provided on all well permit application(s), well construction and abandonment reports.
5) **The owner of the hole(s) shall maintain records of water quality testing and submit this data to the State Engineer upon request.**
6) **A MONITORING HOLE CANNOT BE CONVERTED TO A PRODUCTION WATER WELL, except for purposes of remediation (recovery) or as a permanent dewatering system, if constructed in accordance with the Water Well Construction Rules and policies of the State Engineer.**
7) **IF HOLES WILL NOT BE CONSTRUCTED UNDER THIS NOTICE WITHIN 90 DAYS, PLEASE WRITE, "NO HOLES CONSTRUCTED" ON A COPY OF THE ACKNOWLEDGED NOTICE WITH THE FILE NUMBER AND FAX THE COPY TO THE DIVISION OF WATER RESOURCES.**

THIS ACKNOWLEDGEMENT OF NOTICE DOES NOT INDICATE THAT WELL PERMIT(S) CAN BE APPROVED .

(Use above space for labels or additional conditions as needed)

ATTACHMENT 2

SOIL BORING RECORD AND WELL COMPLETION DETAILS

SAMPLE INFORMATION

SOIL SAMPLING


SPLIT–BARREL SAMPLE


CONTINUOUS SAMPLE


THIN–WALL TUBE SAMPLE
(PER ASTM D1587)


DRILL WITHOUT SAMPLING

SAMPLE ODORS, WHERE APPROPRIATE

NONE	NO ODOR	MO	MODERATE ODOR
WO	WEAK ODOR	SO	STRONG ODOR

GRAPHIC LOG


FILL


GRAVEL


CLAY OR CLAYSTONE


CONCRETE

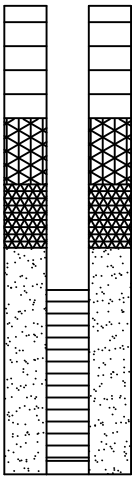

SILT OR SILTSTONE


ASPHALT


SAND OR SANDSTONE


COAL OR LIGNITIC MATERIAL

WELL COMPLETION DETAIL



PORTLAND CEMENT/ SODIUM BENTONITE GROUT

SODIUM BENTONITE CHIP

SODIUM BENTONITE PELLET SEAL

SAND OR GRAVEL BACKFILL

SCREENED INTERVAL

CAP

NOTE:

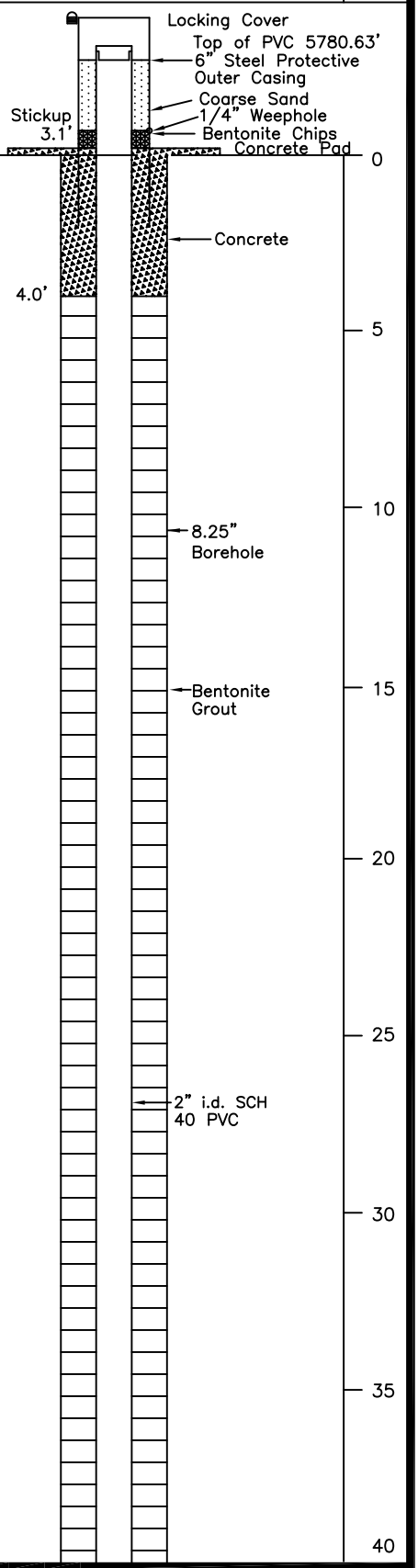
A BORING/WELL RECORD IS CONSIDERED REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE BORING/WELL LOCATION ON THE DATES SHOWN. IT IS NOT WARRANTED TO REPRESENT SUBSURFACE CONDITIONS AT OTHER LOCATIONS OR TIMES.

SUBSURFACE CONDITIONS SHOWN ON THESE RECORDS OR ON PROFILES DEVELOPED FROM THESE RECORDS ARE NOT WARRANTED, THEY ARE ESTIMATED BASED ON ACCEPTED ENGINEERING AND GEOLOGIC PRINCIPLES AND PRACTICES AND REASONABLE PROFESSIONAL JUDGEMENT.

SWIFT RIVER
ENVIRONMENTAL SERVICES, LLC

LEGEND FOR
MONITOR WELL AND
SOIL BORING RECORDS

DEPTH (Feet)	Description	USC	Graphic Log	Sample Interval	Recovery (Inches)	Odor
	Ground Surface: 5778.0'					
0	TOPSOIL: Firm, moderate yellowish-brown (10YR 5/4), silty CLAY, with calcite/gypsum throughout, dry	CL			42/48	NO
2.0	Very stiff, pale brown (5YR 5/2) SILT, dry micaceous					
5	...laminated below 6.5' with light brown (5YR 5/6) staining, in layers 1" to 2" thick	ML			60/60	NO
10	Firm, grayish brown (5YR 3/2), CLAY, dry	CL				
11.0	Loose, moderate brown (5YR 4/4), medium to fine-grained SAND, dry				60/60	NO
11.5	Very dense, grayish brown (10YR 2/4), SAND, dry					
12.5	Medium dense, pale brown (5YR 5/2), very fine-grained SAND, dry with limonite staining	SM				
15						
16.5	Stiff, pale brown (5YR 5/2) silty CLAY, dry				60/60	NO
	...limonite staining from 15.5' to 16.5' and 19.0' to 20.0'					
20	...increase in very fine-grained sand below 22.0'	CL			60/60	NO
25					60/60	NO
27.0	Hard, grayish brown (5YR 3/2), CLAY, dry ...two high angle limonite-lined fractures @ 27.5' and 28.5'					
28.5	Hard, pale brown (5YR 5/2), slightly silty CLAY, dry					
30	Stiff, pale brown, clayey SILT, dry	ML			60/60	NO
31.5	Stiff, gray and brown, CLAY, dry	CL				
32.5	Stiff, light brown and moderate brown (5YR 5/2 & 5YR 2/2), clayey SILT, dry					
35		ML			60/60	NO
	...increasing very fine-grained sand percentage below 38.0'				30/30	NO
40						



SWIFT RIVER ENVIRONMENTAL SERVICES, LLC

Soil Boring Record

Location P-114A-R
Coordinates: N 665826, E 2229380
Drilled By Drilling Engineers Drilling Method HSA
Logged By CRS Checked By SLW
Installation Date July 11 & 12, 2016

DEPTH (Feet)	Description	USC	Graphic Log	Sample Interval	Recovery (Inches)	Odor	Well Detail	DEPTH (Feet)
40	See 32.5' to 42.5'							40
42.5	Stiff, grayish brown (5YR 3/2), slighty silty CLAY, dry	CL			30/30	NO	8.25" Borehole	
44.0	Stiff, light brown and moderate brown (5YR 5/2 & 5YR 2/2), clayey SILT, dry	ML						
45	Stiff, gray, light brown, slighty silty CLAY, dry	CL			30/30	NO		45
46.0	Stiff, light brown and moderate brown (5YR 5/2 & 5YR 2/2), clayey SILT, dry with limonitic staining, slightly fossiliferous (dark brown plant impressions on horizontal surfaces)				30/30	NO		
50	2" wet @ 50.0'	ML			30/30	NO	Bentonite Grout	50
	...brown (5YR 4/1), gray, silty CLAY with navy blue blebs @ 44.5' to 55.0'				30/30	NO		
55	Firm, moderate brown (5YR 4/4), silty, very fine-grained SAND, very micaceous, dry	SM			30/30	NO		55
58.0	Loose, greenish black (5YR 2/1), very fine-grained SAND, slightly silty, dry, crumbly				30/30	NO		
60		SP			30/30	NO		60
65	Stiff, greenish black (5YR 2/1), micaceous CLAYSTONE, dry				30/30	NO		65
	...occasional slickensides between 66.5' and 69.0'	CL			30/30	NO	2" i.d. SCH 40 PVC	
70	...abundant slickensides between 69.0' and 71.5'				30/30	NO		70
73.0	Medium dense, black, very fine-grained SAND with shale blebs/intraclasts, dry	SP			30/30	NO		
75	Stiff, greenish black (5YR 2/1), micaceous CLAYSTONE, dry				30/30	NO		75
		CL			30/30	NO		
80					30/30	NO		80

SWIFT RIVER ENVIRONMENTAL SERVICES, LLC

Soil Boring Record

Location P-114A-R

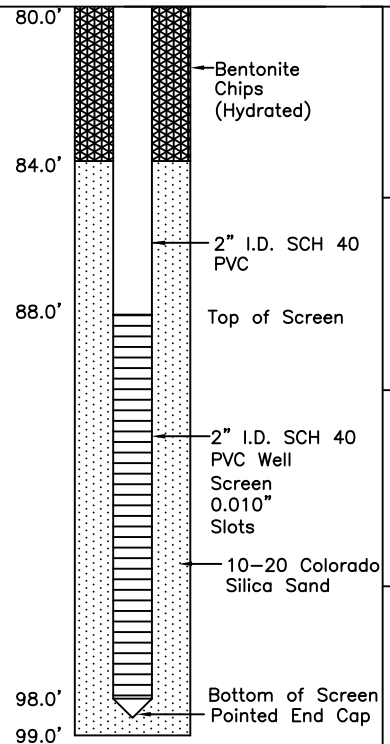
Coordinates: N 665826, E 2229380

Drilled By Drilling Engineers Drilling Method HSA

Logged By CRS Checked By SLW

Installation Date July 11 & 12, 2016

DEPTH (Feet)	Description	USC	Graphic Log	Sample Interval	Recovery (Inches)	Odor
80	See 75.0' to 80.0'	CL			30/30	NO
85	Loose to dense, fine-grained SAND, (variegated white, cream and black grains), moist				60/60	NO
90	...indurated sandstone, platey, friable from 90.5' to 91.5'	SP			50/60	NO
95	...indurated sandstone from 97.0' to 98.0'				48/48	NO
99.0	B.T. @ 99.0'				12/12	NO
100						
105						
110						
115						
120						



SWIFT RIVER ENVIRONMENTAL SERVICES, LLC

Soil Boring Record

Location P-114A-R
Coordinates: N 665826, E 2229380
Drilled By Drilling Engineers Drilling Method HSA
Logged By CRS Checked By SLW
Installation Date July 11 & 12, 2016

ATTACHMENT 3

COPIES OF WELL CONSTRUCTION AND TEST REPORT (FORM GWS-31) WITH ATTACHED BORING LOG, AND MONITORING/OBSERVATION WATER WELL PERMIT APPLICATION FORM (GWS-46)

SWIFT RIVER
ENVIRONMENTAL SERVICES, LLC
An Alaska Native Corporation
26 West Dry Creek Circle, Suite 470 ♦ Littleton, CO 80120 ♦ 303-695-4660

September 12, 2016 S162063.01

Office of the State Engineer
Colorado Division of Water Resources
Department of Natural Resources
1313 Sherman Street, Room 818
Denver, Colorado 80203

RE: Transmittal of Water Well Construction and Test Report and Water Well Permit Application
Waste Management of Colorado, Inc.
DACWPF, Aurora, Colorado

Swift River Environmental Services, Inc. (Swift River), on behalf of Waste Management of Colorado, Inc. (WMC), provides the following items:

- Well Construction and Test Report for one well completed between July 11 and July 12, 2016 and drilled under the Notice of Intent to Construct Monitoring Hole(s) MH-055525).
- The Water Well Permit Application for new well P-114A-R constructed under MH-055525.

Please contact us if you have questions or need additional information at (303) 695-4660 or by Facsimile at (720) 524-8577.

Sincerely,
Swift River Environmental Services, LLC

Cathryn Stewart, C.P.G.
Project Manager

Stephen Wampler, P.E.
General Manager

Attachments
Well Construction and Test Report Form (GWS-31)
Water Well Permit Application Form (GWS-46)

Electronic copies to
Lou Bull, WMC
Tom Schweitzer, WMC

FORM NO. GWS-31 4/2012

WELL CONSTRUCTION AND TEST REPORT

STATE OF COLORADO, OFFICE OF THE STATE ENGINEER
1313 Sherman St., Ste 821, Denver, CO 80203
Main (303) 866-3581 Fax (303) 866-3589 www.water.state.co.us

For Office Use Only

1. WELL PERMIT NUMBER:

2. WELL OWNER INFORMATION

NAME OF WELL OWNER: Waste Management of Colorado, Inc.

MAILING ADDRESS: 2400 West Union Ave.

CITY: Englewood STATE: CO ZIP CODE: 80110

TELEPHONE NUMBER w/area code:

3. WELL LOCATION AS DRILLED: NW 1/4, SE 1/4, Sec., 32 Twp. 4 ☐ N or S, ☒ Range 65 ☐ E or W ☒

DISTANCES FROM SEC. LINES: 1912.5 ft. from ☐ N or ☒ S section line and 2060.6 ft. from ☒ E or ☐ W section line.

SUBDIVISION: NA , LOT NA , BLOCK NA , FILING (UNIT) NA

Optional GPS Location: GPS Unit must use the following settings: Format must be **UTM**, Units must be **meters**, Datum must be **NAD83**, Unit must be set to **true N**, ☐ Zone 12 or ☐ Zone 13

Owner's Well Designation:

Easting:

STREET ADDRESS AT WELL LOCATION:

Northing:

4. GROUND SURFACE ELEVATION 5778.0 feet DRILLING METHOD Hollow Stem Auger

DATE COMPLETED 07/12/2016 TOTAL DEPTH 99.0 feet DEPTH COMPLETED 98.0 feet

5. GEOLOGIC LOG:

Depth	Type	Grain Size	Color	Water Loc.
0 to 99	Sand, silt, and clay			
See attached log				

6. HOLE DIAM (in.)

HOLE DIAM (in.)	From (ft)	To (ft)
8.25	0	99.0

7. PLAIN CASING:

OD (in)	Kind	Wall Size (in)	From (ft)	To (ft)
2.375	PVC	0.154	+3.1	88.0

PERFORATED CASING: Screen Slot Size (in): 0.010

2.375	PVC	0.154	88.0	98.0

8. FILTER PACK:

Material: Silica Sand
Size: 10-20
Interval: 84.0-99.0

9. PACKER PLACEMENT:

Type: Bentonite Chips
Depth: 80.0-84.0

10. GROUTING RECORD

Material	Amount	Density	Interval	Placement
Grout	25.8 cu ft	---	4.0-80.0	Tremie
Concrete	1.4 cu ft	---	0-4.0	Direct

Remarks:

11. DISINFECTION: Type NA Amt. Used N/A

12. WELL TEST DATA: ☐ Check box if Test Data is submitted on Form Number GWS 39 Supplemental Well Test.

TESTING METHOD N/A

Static Level --- ft. Date/Time measured: ---, Production Rate --- gpm.

Pumping Level --- ft. Date/Time measured --- , Test Length (hrs) ---.

Remarks: ---

13. I have read the statements made herein and know the contents thereof, and they are true to my knowledge. This document is signed (or name entered if filing online) and certified in accordance with Rule 17.4 of the Water Well Construction Rules, 2 CCR 402-2. The filing of a document that contains false statements is a violation of section 37-91-108(1)(e), C.R.S., and is punishable by fines up to $5000 and/or revocation of the contracting license. If filing online the State Engineer considers entering of licensed contractor name to be compliance with Rule 17.4

Company Name:	Phone w/area code:	License Number:
Swift River Environmental Services, LLC	(303) 695-4660	---

Mailing Address: 26 West Dry Creek Circle, Ste. 470, Littleton, CO 80120

Sign (or enter name if filing online)	Print Name and Title	Date
Cathryn Stewart	Cathryn Stewart, Project Manager	08/15/2016

Rev 4/2012

INSTRUCTIONS FOR WELL CONSTRUCTION AND TEST REPORT

This report must be computer generated online, typed or printed in **BLACK OR BLUE INK** and may be reproduced by photocopy or computer generation. Photocopy reproductions must retain margins and print quality. Attach additional sheets if more space is required. Each additional sheet must be identified at the top by the well owner's name, the permit number, form name/number and a sequential page number. Report depths in feet below ground surface. **If filing online please see online filing instructions** at www.water.state.co.us

The form must be submitted to the State Engineer's Office within 60 days after completing the well or 7 days after the permit expiration date, whichever is earlier.

A copy of the form must be provided to the well owner.

ITEM INSTRUCTIONS: (numbers correspond with those on the front of this form)

1. Complete the **Well Permit Number** in full.

2. Fill in **Name and Mailing Address of Well Owner** where correspondence should be sent.

3. Complete the blocks for the **actual** location of where the well was drilled. If the owner has more than one well serving this property, provide the identification **(Owner's Designation)** for this well. For wells located in subdivisions, the name, lot, block, filing, and street address must also be provided. An option to providing distances from section lines is to provide an accurate GPS location in GPS format. The required GPS unit settings must be as indicated on this form.

   Colorado contains two (2) UTM zones. Zone 13 covers most of Colorado. The boundary between Zone 12 and Zone 13 is the 108th Meridian (longitude). West of the 108th Meridian is UTM Zone 12 and east of the 108th Meridian is UTM Zone 13. The 108th Meridian is approximately 57 miles east of the Colorado-Utah state line. On most GPS units, the UTM zone is given as part of the Easting measurement, e.g. 12T0123456. Check the appropriate box for the zone.

4. Report the ground surface elevation in feet above sea level if available. This value may be obtained from a topographic map. Describe the drilling method used to construct the well and the date completed. Indicate the total depth and the actual completed depth of the well.

5. Fully describe the materials encountered in drilling. Do not use formation names unless they are in conjunction with a description of materials.
   Examples of descriptive terms include:
   Type – sandstone, sand, etc.
   Grain size – Boulders, gravel, sand, silt, clay, etc.
   Color – All materials, most critical in sedimentary rock
   Water Location – Depth when water is encountered (if it can be determined)

6. Provide the diameters of the drilled borehole.

7. The outside diameter, kind, wall thickness, and interval of plain and perforated casing lengths must be indicated. For perforated casing, the screen size must be indicated.

8. Indicate the material and size of filter pack (e.g. sand, gravel, etc.) and the interval where placed.

9. Indicate the type and setting depth for any packers installed.

10. The material, amount, and interval of the grout slurry must be reported. Density may be indicated as pounds per gallon, gallons of water per sack, total gallons of water used, or number of sacks used, etc. Specify the grout placement method, i.e. tremie pipe or positive placement. The percentage of additives mixed with the grout should be reported under remarks in item 5.

11. Record the type and the amount of disinfection used, how placed, and the length of time left in the hole.

12. Report well test data as required by Rule 10.7. Spaces are provided to report all measurements made during the test. The report should show that the test complied with the provisions of the rules. If a test was not performed explain when it will be done. If available, report clock time when measurements were taken.

13. Fill in **Company Name and Address of Contractor** who constructed the well. The licensed contractor responsible for the construction of the well must sign or if filing online, enter his/her name on the report. If filing online the State Engineer considers the entering of the licensed contractors name on the form to be a certification of accuracy and truthfulness in compliance with Rule 17.4 of the Water Well Construction Rules and Regulations, 2 CCR 402-2.

Submit completed report to: State of Colorado, Office of the State Engineer, 818 Centennial Bldg., 1313 Sherman St, Ste 821, Denver, CO 80203. You may also save, print, scan and email the completed form to dwrpermitsonline@state.co.us

IF YOU HAVE ANY QUESTIONS regarding any item on this form, please call the Division of Water Resources Ground Water Information Desk (303-866-3587), or the nearest Division of Water Resources Field Office located in Greeley (970-352-8712), Pueblo (719-542-3368), Alamosa (719-589-6683), Montrose (970-249-6622), Glenwood Springs (970-945-5665), Steamboat Springs (970-879-0272), or Durango (970-247-1845), or refer to our web site at www.water.state.co.us for general information, forms, online filing instructions and access to state rules and statutes.

SAMPLE INFORMATION

SOIL SAMPLING


SPLIT–BARREL SAMPLE


CONTINUOUS SAMPLE


THIN–WALL TUBE SAMPLE
(PER ASTM D1587)


DRILL WITHOUT SAMPLING

SAMPLE ODORS, WHERE APPROPRIATE

NONE	NO ODOR	MO	MODERATE ODOR
WO	WEAK ODOR	SO	STRONG ODOR

GRAPHIC LOG


FILL


GRAVEL


CLAY OR CLAYSTONE


CONCRETE

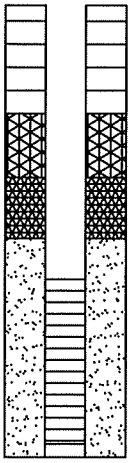

SILT OR SILTSTONE


ASPHALT


SAND OR SANDSTONE


COAL OR LIGNITIC MATERIAL

WELL COMPLETION DETAIL



PORTLAND CEMENT/ SODIUM BENTONITE GROUT

SODIUM BENTONITE CHIP

SODIUM BENTONITE PELLET SEAL

SAND OR GRAVEL BACKFILL

SCREENED INTERVAL

CAP

NOTE:

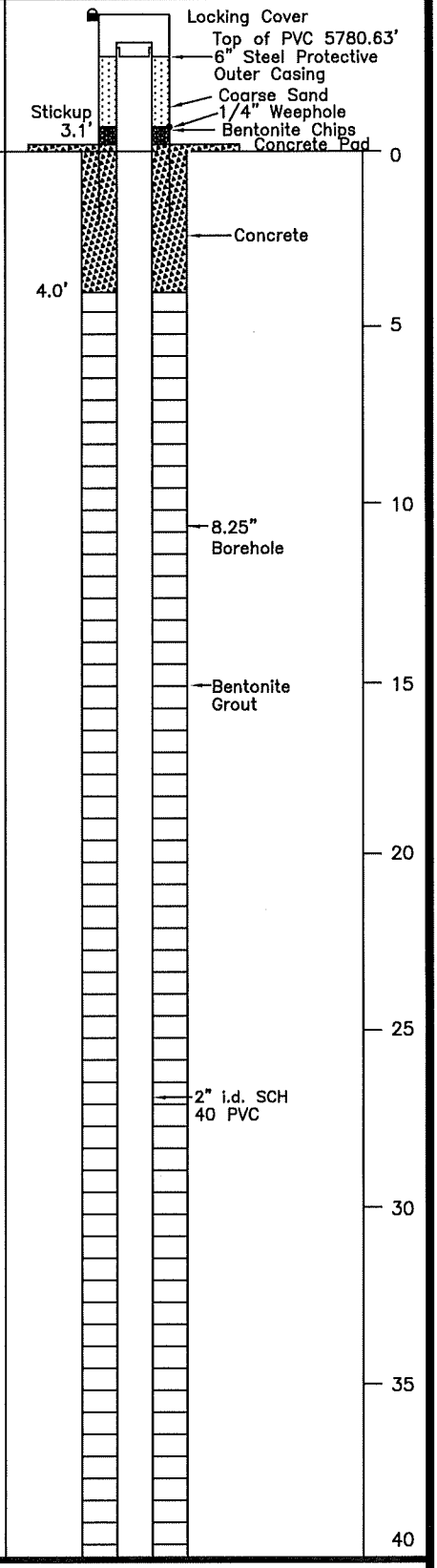
A BORING/WELL RECORD IS CONSIDERED REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE BORING/WELL LOCATION ON THE DATES SHOWN. IT IS NOT WARRANTED TO REPRESENT SUBSURFACE CONDITIONS AT OTHER LOCATIONS OR TIMES.

SUBSURFACE CONDITIONS SHOWN ON THESE RECORDS OR ON PROFILES DEVELOPED FROM THESE RECORDS ARE NOT WARRANTED, THEY ARE ESTIMATED BASED ON ACCEPTED ENGINEERING AND GEOLOGIC PRINCIPLES AND PRACTICES AND REASONABLE PROFESSIONAL JUDGEMENT.

SWIFT RIVER
ENVIRONMENTAL SERVICES, LLC

LEGEND FOR
MONITOR WELL AND
SOIL BORING RECORDS

DEPTH (Feet)	Description	USC	Graphic Log	Sample Interval	Recovery (Inches)	Odor
	Ground Surface: 5778.0'					
0	TOPSOIL: Firm, moderate yellowish-brown (10YR 5/4), silty CLAY, with calcite/gypsum throughout, dry	CL			42/48	NO
2.0	Very stiff, pale brown (5YR 5/2) SILT, dry micaceous	ML			60/60	NO
5	...laminated below 6.5' with light brown (5YR 5/6) staining, in layers 1" to 2" thick					
10	Firm, grayish brown (5YR 3/2), CLAY, dry	CL			60/60	NO
11.0	Loose, moderate brown (5YR 4/4), medium to fine-grained SAND, dry	SM				
11.5	Very dense, grayish brown (10YR 2/4), SAND, dry					
12.5	Medium dense, pale brown (5YR 5/2), very fine-grained SAND, dry with limonite staining					
15	Stiff, pale brown (5YR 5/2) silty CLAY, dry	CL			60/60	NO
16.5	...limonite staining from 15.5' to 16.5' and 19.0' to 20.0'					
20	...increase in very fine-grained sand below 22.0'				60/60	NO
25					60/60	NO
27.0	Hard, grayish brown (5YR 3/2), CLAY, dry ...two high angle limonite-lined fractures @ 27.5' and 28.5'					
28.5	Hard, pale brown (5YR 5/2), slightly silty CLAY, dry					
30	Stiff, pale brown, clayey SILT, dry	ML			60/60	NO
31.5	Stiff, gray and brown, CLAY, dry	CL				
32.5	Stiff, light brown and moderate brown (5YR 5/2 & 5YR 2/2), clayey SILT, dry	ML			60/60	NO
35	...increasing very fine-grained sand percentage below 38.0'				30/30	NO
40						



SWIFT RIVER
ENVIRONMENTAL SERVICES, LLC

Soil Boring Record

Location P-114A-R
Coordinates: N 665826, E 2229380
Drilled By Drilling Engineers Drilling Method HSA
Logged By CRS Checked By SLW
Installation Date July 11 & 12, 2016

DEPTH (Feet)	Description	USC	Graphic Log	Sample Interval	Recovery (Inches)	Odor	Well Detail	DEPTH (Feet)
40	See 32.5' to 42.5'							40
42.5	Stiff, grayish brown (5YR 3/2), slighty silty CLAY, dry	CL			30/30	NO	8.25" Borehole	
44.0	Stiff, light brown and moderate brown (5YR 5/2 & 5YR 2/2), clayey SILT, dry	ML						
45	Stiff, gray, light brown, slighty silty CLAY, dry	CL			30/30	NO		45
46.0	Stiff, light brown and moderate brown (5YR 5/2 & 5YR 2/2), clayey SILT, dry with limonitic staining, slightly fossiliferous (dark brown plant impressions on horizontal surfaces)				30/30	NO		
50	2" wet @ 50.0'	ML			30/30	NO	Bentonite Grout	50
	...brown (5YR 4/1), gray, silty CLAY with navy blue blebs @ 44.5' to 55.0'				30/30	NO		
55	Firm, moderate brown (5YR 4/4), silty, very fine-grained SAND, very micaceous, dry	SM			30/30	NO		55
58.0	Loose, greenish black (5YR 2/1), very fine-grained SAND, slightly silty, dry, crumbly				30/30	NO		
60		SP			30/30	NO		60
65	Stiff, greenish black (5YR 2/1), micaceous CLAYSTONE, dry				30/30	NO		65
	...occasional slickensides between 66.5' and 69.0'	CL			30/30	NO	2" i.d. SCH 40 PVC	
70	...abundant slickensides between 69.0' and 71.5'				30/30	NO		70
73.0	Medium dense, black, very fine-grained SAND with shale blebs/intraclasts, dry	SP			30/30	NO		
75	Stiff, greenish black (5YR 2/1), micaceous CLAYSTONE, dry				30/30	NO		75
		CL			30/30	NO		
80					30/30	NO		80

SWIFT RIVER
ENVIRONMENTAL SERVICES, LLC

Soil Boring Record

Location P-114A-R
Coordinates: N 665826, E 2229380
Drilled By Drilling Engineers Drilling Method HSA
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Installation Date July 11 & 12, 2016

DEPTH (Feet)	Description	USC	Graphic Log	Sample Interval	Recovery (Inches)	Odor	Well Detail	DEPTH (Feet)
80	See 75.0' to 80.0'	CL			30/30	NO	80.0' Bentonite Chips (Hydrated)	80
85	Loose to dense, fine–grained SAND, (variegated white, cream and black grains), moist				60/60	NO	84.0' 2" I.D. SCH 40 PVC	85
90	...indurated sandstone, platey, friable from 90.5' to 91.5'	SP			50/60	NO	88.0' Top of Screen; 2" I.D. SCH 40 PVC Well Screen 0.010" Slots	90
95	...indurated sandstone from 97.0' to 98.0'				48/48	NO	10–20 Colorado Silica Sand	95
99.0	B.T. @ 99.0'				12/12	NO	98.0' Bottom of Screen; 99.0' Pointed End Cap	
100								100
105								105
110								110
115								115
120								120

SWIFT RIVER
ENVIRONMENTAL SERVICES, LLC

Soil Boring Record

Location P–114A–R
Coordinates: N 665826, E 2229380
Drilled By Drilling Engineers Drilling Method HSA
Logged By CRS Checked By SLW
Installation Date July 11 & 12, 2016

COLORADO DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES
1313 SHERMAN ST., Ste 821, DENVER CO 80203
Phone: (303) 866-3581 Fax: (303) 866-2223 dwrpermitsonline@state.co.us

Office Use Only

Form GWS-46 (11/2011)

MONITORING/OBSERVATION Water Well Permit Application

Review instructions on reverse side prior to completing form.
The form must be typed, completed online or in black or blue ink.

1. Well Owner Information

Name of well owner: Waste Management of Colorado, Inc.

Mailing address: 2400 West Union Ave.

City	State	Zip code
Englewood	CO	80110

Telephone #	E-Mail (If filing online it is required)
303-914-1445	--

2. Type Of Application (check applicable boxes)

☐ Use existing well ☐ Replacement for existing monitoring well:
☒ Construct new well Permit no.:
☐ Other:

3. Refer To (if applicable)

Monitoring hole acknowledgment	Well name or #
MH- 055525	P-114A-R

4. Location Of Proposed Well (Important! See Instructions)

County: Denver

NW 1/4 of the SE 1/4

Section	Township	N or S	Range	E or W	Principal Meridian
32	4	☐ ☒	65	☐ ☒	6th

Distance of well from section lines (section lines are typically not property lines)
1912.5 Ft from ☐ N ☒ S 2060.6 Ft from ☒ E ☐ W

For replacement wells only – distance and direction from old well to new well
NA feet NA direction

Well location address (Include City, State, Zip) ☐ Check if well address is same as Item 1
3500 South Gun Club Road Aurora, CO 80018

Optional: GPS well location information in UTM format
You must check GPS unit for required settings as follows:

Format must be UTM
☐ Zone 12 or ☐ Zone 13
Units must be Meters
Datum must be NAD83
Unit must be set to true north
Was GPS unit checked for above? ☐ YES

Easting _____
Northing _____
Remember to set Datum to NAD83

5. Property Owner Information

Name of property owner: Waste Management of Colorado, Inc.

Mailing address: 2400 West Union Ave.

City	State	Zip Code
Englewood	CO	80110

Telephone #: 303-914-1445

6. Use Of Well

Use of this well is limited to monitoring water levels and/or water quality sampling

7. Well Data (proposed)

Total depth	Aquifer
99.0 feet	Lower Sandstone

8. Consultant Information (if applicable)

Name of contact person: Cathryn Stewart

Company name: Swift River Environmental Services

Mailing address: 26 West Dry Creek Circle

City	State	Zip Code
Littleton	CO	80120

Telephone #: 303-695-4660

9. Proposed Well Driller License #(optional):

10. Name of Well Owner or Authorized Agent

The making of false statements herein constitutes perjury in the second degree, which is punishable as a class 1 misdemeanor pursuant to C.R.S. 24-4-104 (13)(a). I have read the statements herein, know the contents thereof and state that they are true to my knowledge.

Sign or enter full name here	Date (mm/dd/yyyy)
Cathryn Stewart	8/15/16

If signing print name. Print title if other than land owner
for WMC
Cathryn Stewart

Office Use Only

USGS map name	DWR map no	Surface elev

Receipt area only

DIV ____ WD ____ BA ____ MD ____

COLORADO DIVISION OF WATER RESOURCES
DEPARTMENT OF NATURAL RESOURCES

GWS-46 MONINST (11/2011)

MONITORING/OBSERVATION WELL PERMIT APPLICATION INSTRUCTIONS

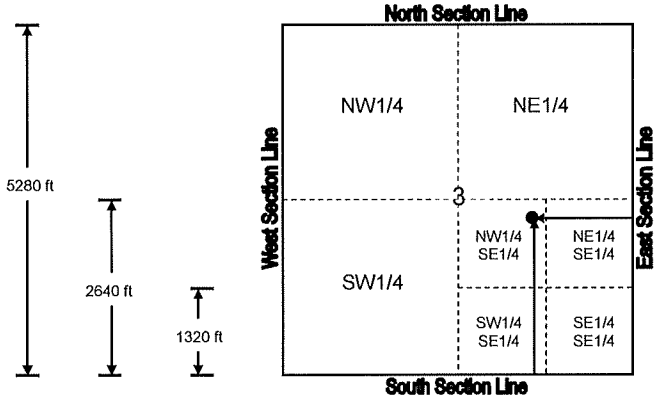
Applications must be computer generated on-line, typewritten or printed in BLACK or BLUE INK. ALL ITEMS in the application must be completed. Incomplete applications may be returned for more information. Applications are evaluated in chronological order. Please allow approximately six weeks for processing. This form may be reproduced by photocopying or computer generation. Reproductions must retain margins and print quality of the original form. If filing online, see online filing instructions for further information. You may also save, print, scan and email the completed form to: dwrpermitsonline@state.co.us

FEES: This application must be submitted with a $100 filing fee. (The fee for an application to replace or deepen an existing permitted monitoring/observation well is $100 for locations outside Designated Ground Water Basins, and $60 inside Designated Ground Water Basins.) Acceptable forms of payment are check or money order, payable to the "Colorado Division of Water Resources." Payments made by Visa, MasterCard or Discover card can be accepted by phone through the Records Section at 303.866.3581. **Fees are nonrefundable.**

USES: This form (GWS-46) is to be used when applying for a permit where the only uses are monitoring of water levels and/or water quality sampling. For well construction criteria refer to the Colorado Water Well Construction Rules, 2CCR 402-2. A copy of the Rules may be obtained from any Division of Water Resources Office for a fee of $5, or you may access them online from the State Board of Examiners' (BOE) website at http://water.state.co.us/dwripub/documents/constructionrules05.pdf

ITEM INSTRUCTIONS: (numbers correspond with those on the front of this form)

1. Provide the name of the well owner and the mailing address where all correspondence will be sent.
2. Check and complete all boxes that apply.
3. Provide the MH number assigned by the Division of Water Resources in response to the notice of intent to construct a monitoring/observation well. Complete the well name if the structure has a name or identifying number.
4. If applying for a permit to **construct a new well**, you **must** provide the county, section #, township, range and principal meridian. You **do not** need to provide the ¼ of the ¼ section designation, distances from section lines or an optional GPS location (UTM coordinates). If a permit is issued and a well constructed, the authorized individual will be required to provide an accurate GPS location (UTM coordinates) of the "as-built" well location. If applying for a permit to **use an existing well** you **must** provide the well location information stated above, as well as either a GPS location (UTM coordinates) of the existing well site, or distances from section lines **(including the ¼ of the ¼ section designation)** as follows: In a typical case, a township is comprised of 36 sections, with each section ideally one mile square, or 5,280 feet on each side. Sections are further divided into quarter sections. Each ¼ Section is 2,640 feet by 2,640 feet and comprises 160 acres. Each ¼ section can be further divided into additional quarters. Each ¼ of the ¼ Section is 1,320 feet by 1,320 feet and comprises 40 acres. The distances are measured from the section lines. In the following example, the well is located 2,500 feet from the South Section line and 1,400 feet from the East Section line:



Well Location Example: NW1/4 of the SE1/4 of Section 3, being 2500 feet from the South Section Line and 1400 feet from the East Section Line.

If providing a GPS location (UTM coordinates), the required GPS unit settings must be as indicated on this form. Colorado contains two UTM zones (12 & 13). Zone 13 covers most of Colorado. The boundary between Zone 12 and Zone 13 is the 108th Meridian (longitude). West of the 108th Meridian is UTM Zone 12 and east of the 108th Meridian is UTM Zone 13. The 108th Meridian is approximately 57 miles east of the Colorado-Utah state line. On most GPS units, the UTM zone is given as part of the Easting measurement, e.g. 12T0123456. Check the appropriate box for the zone. Provide the property address of the well location if one exists. If it is the same as the mailing address, check the box next to the well location address.

5. Provide property owner information.
6. Use of this well is limited to monitoring water levels and/or water quality sampling only.
7. The actual or anticipated total depth must be provided. Provide the name of the aquifer in which the well will be completed.
8. Provide consultant information (if applicable). Note: A consultant may sign this application on behalf of their client.
9. Monitoring/observation wells must be constructed by a Colorado licensed well construction contractor or authorized individual, as defined in the Well Construction Rules, 2CCR 402-2. Only a licensed contractor may construct any monitoring/observation well that penetrates a confining layer, or, is to be converted into a future production well. The well must be constructed in compliance with the Well Construction Rules, unless a variance has been approved allowing an alternative construction design.
10. The individual signing the application or entering their name (and title if applicable) must be the applicant or an officer of the corporation/company/agency identified as the applicant, their attorney or consultant. An authorized agent may also sign the application, if a letter signed by the applicant or their attorney is submitted with the application authorizing that agent to sign or enter their name on the applicant's behalf. Payment must be received via phone, fax or mail prior to processing the application. If filing online please call the Records Section at 303.866.3581 to pay via credit card.

IF YOU HAVE ANY QUESTIONS regarding any item on the application form, please call the Division of Water Resources Ground Water Information Desk (303-866-3587), or the nearest Division of Water Resources Field Office located in Greeley (970-352-8712), Pueblo (719-542-3368), Alamosa (719-589-6683), Montrose (970-249-6622), Glenwood Springs (970-945-5665), Steamboat Springs (970-879-0272), or Durango (970-247-1845), or refer to CDWR web site at http://www.water.state.co.us for general information.

ATTACHMENT 4

RECORD OF WELL DEVELOPMENT

JOB NO. SLV2026.3 | PAGE 1 OF 2

JOB NAME DAC WRF Well Replacement

LOCATION ~20' NE of P-114A

BY CRS DATE 7/14/16

WELL DEVELOPMENT

WELL NO. P-114A-R

DATE: 7/14/16

WATER LEVEL (START): 75.95' Below TOC

MEASURED TOTAL DEPTH OF WELL (START): 102.6' Below TOC (CRS — too far down in pointed cap, Do not use.)

TIME (START): 0745

WATER DESCRIPTION (START)

Color: Moderate brown Clear (Cloudy)

Odor : (None) Weak Moderate Strong

ANY FILMS OR FLOATING MATERIAL: None

WATER DESCRIPTION (FINISH)

Color: Light brown CLEAR (Slightly CLOUDY)

Odor : (None) Weak Moderate Strong

ANY FILMS OR FLOATING MATERIAL: None

102.6 − 75.95 = ~26.7 ft × 0.16 gpf = 4.3 gal/1 wb volume

TIME (FINISH): 0940

WATER LEVEL (FINISH): 99.20

APPROX. VOLUME WATER REMOVED: 43 gallons

MEASURED TOTAL DEPTH OF WELL (FINISH): 101.0 (Driller) Below TOC, clear

COMMENTS:

	Time	Volume ✓	pH	Temp	SC	Description
Bail	0745	0	7.62	14.8	3,495	Mod. brown, V. turbid
	0751	1 gal	7.51	14.4	3.605	" "
	0757	2.5 gal	7.45	15.0	3.543	" "; settles to about 1" clear in top 5 min
Pump (Mega Monsoon ~2 gpm)	0818	① 5 gal	7.37	16.2	3,565	Light gray, mod. turbidity
	0830	② 8.6 gal	7.35	16.5	3.510	
	0838	③ 12.9 gal	87.5 7.37	16.5	3.400	
1.24 min/1 gallon	0845	④ 17.2 gal	88.0 7.37	16.0	3.123	Light brown, mod. turbidity
			91.0 0837 7.38	91.0 ⑤ 0842		

0850 Surge w/in the ~8' wtr column from ~3" off bottom

		WLV	Gal	∇	pH	Temp	SC	Description
0852	⑤	29.5	92.92	7.27		15.7	3,000	Light brown, settling more quickly
0854	surge again							
0900	⑥	25.8	94.00		7.38	15.9	2,885	" " " "
	Surge again		95.30 @ 0905					
0908	⑦	30.1	95.75		7.40	16.0	2.791	Light brown, mod-turbid
	Surge again							
0917	⑧	34.4	96.95		7.43	16.0	2.871	" " " "
	Surge again							
0928	⑨	38.7	99.60		7.46	15.9	2.679	" "
0940	Surge ⑩	43.0	99.20		7.52	15.8	2.831	Light brown, low turbidity.

Recovery Test

	99.01	0 sec
	97.89	10
	97.00	20
2.6'	96.85	30
	96.68	40
	96.53	50
	96.43	60
	96.05	1+30
1.01	95.80	1+60
	95.24	2+30
0.92	94.71	2+60
	94.32	3+30
	93.91	3+60

Shut off pump at 0940.

P 2 of 2

ATTACHMENT 5

LABORATORY ANALYTICAL RESULTS OF CONSTRUCTION WATER

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

Job Number: 280-85464-1

Job Description: 555|Denver/Arapahoe Chem.

For:
Waste Management
2400 West Union Avenue
Englewood, CO 80110

Attention: Mr. Tom Schweitzer

Approved for release.
Betsy A Sara
Project Manager II
7/29/2016 12:23 PM

Betsy A Sara, Project Manager II
4955 Yarrow Street, Arvada, CO, 80002
(303)736-0189
betsy.sara@testamericainc.com
07/29/2016

The test results in this report relate only to the samples in this report and meet all requirements of NELAC, with any exceptions noted. Pursuant to NELAP, this report shall not be reproduced except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the TestAmerica Denver Project Manager.

The Lab Certification ID# is 4025.

Reporting limits are adjusted for sample size used, dilutions and moisture content if applicable.

Table of Contents

CASE NARRATIVE

Client: Waste Management

Project: 555|Denver/Arapahoe Chem.

Report Number: 280-85464-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report may include reporting limits (RLs) less than TestAmerica's standard reporting limit. The reported sample results and associated reporting limits are being used specifically to meet the needs of this project. Note that data are not normally reported to these levels without qualification because they are inherently less reliable and potentially less defensible than required by the latest industry standards.

Sample Receiving

The samples were received on 07/12/2016; the samples arrived in good condition, properly preserved and on ice. The temperature of the cooler at receipt was 16.4 C. The cooler temperature was above the recommended temperature of 6.0C, however the cooler containing ice was received the same day as sampling and the chilling process had begun.

Holding Times

All holding times were within established control limits.

Method Blanks

All Method Blanks were within established control limits.

Laboratory Control Samples (LCS)

All Laboratory Control Samples were within established control limits.

Matrix Spike and Matrix Spike Duplicate (MS/MSD)

All MS/MSD recoveries were within established control limits.

Organics

The Method 8260B surrogate recoveries of 1,2-Dichloroethane-d4 and Dibromofluoromethane were above the upper control limits for sample TRIP BLANK. Because the data are considered to be biased high and all target analytes in the sample were non-detect above the reporting limits, corrective action was deemed unnecessary.

EXECUTIVE SUMMARY - Detections

Client: Waste Management

Job Number: 280-85464-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
280-85464-1	**RIG WATER**					
Bromodichloromethane		6.6		1.0	ug/L	8260B
Bromoform		6.4		4.0	ug/L	8260B
Dibromochloromethane		11		5.0	ug/L	8260B

METHOD SUMMARY

Client: Waste Management

Job Number: 280-85464-1

Description	Lab Location	Method	Preparation Method
Matrix: Water			
Volatile Organic Compounds (GC/MS)	TAL DEN	SW846 8260B	
Purge and Trap	TAL DEN		SW846 5030B

Lab References:

TAL DEN = TestAmerica Denver

Method References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

METHOD / ANALYST SUMMARY

Client: Waste Management

Job Number: 280-85464-1

Method	Analyst	Analyst ID
SW846 8260B	Ilczyszyn, Dennis P	DPI

SAMPLE SUMMARY

Client: Waste Management

Job Number: 280-85464-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
280-85464-1	RIG WATER	Water	07/12/2016 1100	07/12/2016 1555
280-85464-2TB	TRIP BLANK	Water	07/12/2016 0000	07/12/2016 1555

SAMPLE RESULTS

Client: Waste Management

Job Number: 280-85464-1

Client Sample ID: **RIG WATER**

Lab Sample ID: 280-85464-1
Client Matrix: Water

Date Sampled: 07/12/2016 1100
Date Received: 07/12/2016 1555

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-333972	Instrument ID:	VMS_G2
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	G2_0457.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	07/18/2016 1126			Final Weight/Volume:	20 mL
Prep Date:	07/18/2016 1126				

Analyte	Result (ug/L)	Qualifier	RL
1,1,1-Trichloroethane	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
1,1,2-Trichloroethane	ND		3.0
1,1-Dichloroethane	ND		5.0
1,1-Dichloroethene	ND		5.0
1,2-Dichloroethane	ND		1.0
1,2-Dichloropropane	ND		1.0
Benzene	ND		5.0
Bromodichloromethane	6.6		1.0
Bromoform	6.4		4.0
Bromomethane	ND		10
Carbon tetrachloride	ND		1.0
Chlorobenzene	ND		5.0
Chloroethane	ND		10
Chloroform	ND		5.0
Chloromethane	ND		10
cis-1,3-Dichloropropene	ND		5.0
Dibromochloromethane	11		5.0
Ethylbenzene	ND		5.0
Tetrachloroethene	ND		5.0
Toluene	ND		5.0
trans-1,2-Dichloroethene	ND		10
Trichloroethene	ND		5.0
Vinyl chloride	ND		2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	112		70 - 127
4-Bromofluorobenzene (Surr)	92		78 - 120
Dibromofluoromethane (Surr)	113		77 - 120
Toluene-d8 (Surr)	100		80 - 125

Client: Waste Management

Job Number: 280-85464-1

Client Sample ID: **TRIP BLANK**

Lab Sample ID: 280-85464-2TB
Client Matrix: Water

Date Sampled: 07/12/2016 0000
Date Received: 07/12/2016 1555

8260B Volatile Organic Compounds (GC/MS)

Analysis Method:	8260B	Analysis Batch:	280-333972	Instrument ID:	VMS_G2
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	G2_0451.D
Dilution:	1.0			Initial Weight/Volume:	20 mL
Analysis Date:	07/18/2016 0928			Final Weight/Volume:	20 mL
Prep Date:	07/18/2016 0928				

Analyte	Result (ug/L)	Qualifier	RL
1,1,1-Trichloroethane	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
1,1,2-Trichloroethane	ND		3.0
1,1-Dichloroethane	ND		5.0
1,1-Dichloroethene	ND		5.0
1,2-Dichloroethane	ND		1.0
1,2-Dichloropropane	ND		1.0
Benzene	ND		5.0
Bromodichloromethane	ND		1.0
Bromoform	ND		4.0
Bromomethane	ND		10
Carbon tetrachloride	ND		1.0
Chlorobenzene	ND		5.0
Chloroethane	ND		10
Chloroform	ND		5.0
Chloromethane	ND		10
cis-1,3-Dichloropropene	ND		5.0
Dibromochloromethane	ND		5.0
Ethylbenzene	ND		5.0
Tetrachloroethene	ND		5.0
Toluene	ND		5.0
trans-1,2-Dichloroethene	ND		10
Trichloroethene	ND		5.0
Vinyl chloride	ND		2.0

Surrogate	%Rec	Qualifier	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	129	X	70 - 127
4-Bromofluorobenzene (Surr)	108		78 - 120
Dibromofluoromethane (Surr)	129	X	77 - 120
Toluene-d8 (Surr)	117		80 - 125

DATA REPORTING QUALIFIERS

Client: Waste Management

Job Number: 280-85464-1

Lab Section	Qualifier	Description
GC/MS VOA		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
	X	Surrogate is outside control limits

QUALITY CONTROL RESULTS

Client: Waste Management

Job Number: 280-85464-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:280-333972					
LCS 280-333972/4	Lab Control Sample	T	Water	8260B	
MB 280-333972/6	Method Blank	T	Water	8260B	
280-85437-G-1 MS	Matrix Spike	T	Water	8260B	
280-85437-G-1 MSD	Matrix Spike Duplicate	T	Water	8260B	
280-85464-1	RIG WATER	T	Water	8260B	
280-85464-2TB	TRIP BLANK	T	Water	8260B	

Report Basis
T = Total

Client: Waste Management

Job Number: 280-85464-1

Surrogate Recovery Report

8260B Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DCA %Rec	BFB %Rec	DBFM %Rec	TOL %Rec
280-85464-1	RIG WATER	112	92	113	100
280-85464-2	TRIP BLANK	129X	108	129X	117
MB 280-333972/6		114	97	114	104
LCS 280-333972/4		106	89	105	94
280-85437-G-1 MS		117	90	112	97
280-85437-G-1 MSD		116	92	113	100

Surrogate	Acceptance Limits
DCA = 1,2-Dichloroethane-d4 (Surr)	70-127
BFB = 4-Bromofluorobenzene (Surr)	78-120
DBFM = Dibromofluoromethane (Surr)	77-120
TOL = Toluene-d8 (Surr)	80-125

Client: Waste Management

Job Number: 280-85464-1

Method Blank - Batch: 280-333972

Method: 8260B
Preparation: 5030B

Lab Sample ID:	MB 280-333972/6	Analysis Batch:	280-333972	Instrument ID:	VMS_G2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	G2_0448.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	07/18/2016 0822	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	07/18/2016 0822				
Leach Date:	N/A				

Analyte	Result	Qual	RL
1,1,1-Trichloroethane	ND		5.0
1,1,2,2-Tetrachloroethane	ND		5.0
1,1,2-Trichloroethane	ND		3.0
1,1-Dichloroethane	ND		5.0
1,1-Dichloroethene	ND		5.0
1,2-Dichloroethane	ND		1.0
1,2-Dichloropropane	ND		1.0
Benzene	ND		5.0
Bromodichloromethane	ND		1.0
Bromoform	ND		4.0
Bromomethane	ND		10
Carbon tetrachloride	ND		1.0
Chlorobenzene	ND		5.0
Chloroethane	ND		10
Chloroform	ND		5.0
Chloromethane	ND		10
cis-1,3-Dichloropropene	ND		5.0
Dibromochloromethane	ND		5.0
Ethylbenzene	ND		5.0
Tetrachloroethene	ND		5.0
Toluene	ND		5.0
trans-1,2-Dichloroethene	ND		10
Trichloroethene	ND		5.0
Vinyl chloride	ND		2.0

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	114	70 - 127
4-Bromofluorobenzene (Surr)	97	78 - 120
Dibromofluoromethane (Surr)	114	77 - 120
Toluene-d8 (Surr)	104	80 - 125

Client: Waste Management

Job Number: 280-85464-1

Lab Control Sample - Batch: 280-333972

Method: 8260B
Preparation: 5030B

Lab Sample ID:	LCS 280-333972/4	Analysis Batch:	280-333972	Instrument ID:	VMS_G2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	G2_0447.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	07/18/2016 0803	Units:	ug/L	Final Weight/Volume:	20 mL
Prep Date:	07/18/2016 0803				
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
1,1,1-Trichloroethane	5.00	5.86	117	65 - 135	
1,1-Dichloroethane	5.00	5.39	108	65 - 135	
1,1-Dichloroethene	5.00	5.51	110	65 - 136	
1,2-Dichloropropane	5.00	5.34	107	64 - 135	
1,3-Dichlorobenzene	5.00	5.07	101	65 - 135	
Benzene	5.00	5.39	108	65 - 135	
Bromodichloromethane	5.00	5.42	108	65 - 135	
Carbon tetrachloride	5.00	6.06	121	65 - 135	
Chlorobenzene	5.00	5.18	104	65 - 135	
Chloroform	5.00	5.67	113	65 - 135	
Ethylbenzene	5.00	5.16	103	65 - 135	
Methylene Chloride	5.00	5.08	102	54 - 141	
Tetrachloroethene	5.00	5.57	111	65 - 135	
Toluene	5.00	5.46	109	65 - 135	
trans-1,2-Dichloroethene	5.00	5.69	114	65 - 135	J
Trichloroethene	5.00	5.62	112	65 - 135	

Surrogate	% Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	106	70 - 127
4-Bromofluorobenzene (Surr)	89	78 - 120
Dibromofluoromethane (Surr)	105	77 - 120
Toluene-d8 (Surr)	94	80 - 125

Client: Waste Management

Job Number: 280-85464-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-333972

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	280-85437-G-1 MS	Analysis Batch:	280-333972	Instrument ID:	VMS_G2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	G2_0455.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	07/18/2016 1047			Final Weight/Volume:	20 mL
Prep Date:	07/18/2016 1047				20 mL
Leach Date:	N/A				

MSD Lab Sample ID:	280-85437-G-1 MSD	Analysis Batch:	280-333972	Instrument ID:	VMS_G2
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	G2_0456.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	20 mL
Analysis Date:	07/18/2016 1107			Final Weight/Volume:	20 mL
Prep Date:	07/18/2016 1107				20 mL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
1,1,1-Trichloroethane	118	118	65 - 135	0	20		
1,1-Dichloroethane	112	112	65 - 135	0	21		
1,1-Dichloroethene	112	114	65 - 136	2	20		
1,2-Dichloropropane	105	107	64 - 135	2	20		
1,3-Dichlorobenzene	97	102	65 - 135	5	20		
Benzene	108	109	65 - 135	2	20		
Bromodichloromethane	108	110	65 - 135	2	20		
Carbon tetrachloride	119	119	65 - 135	0	21		
Chlorobenzene	102	105	65 - 135	3	20		
Chloroform	115	116	65 - 135	1	20		
Ethylbenzene	99	103	65 - 135	4	20		
Methylene Chloride	106	107	54 - 141	1	26		
Tetrachloroethene	104	109	65 - 135	4	20		
Toluene	106	108	65 - 135	2	20		
trans-1,2-Dichloroethene	113	113	65 - 135	0	24		
Trichloroethene	107	109	65 - 135	1	20		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
1,2-Dichloroethane-d4 (Surr)	117	116	70 - 127
4-Bromofluorobenzene (Surr)	90	92	78 - 120
Dibromofluoromethane (Surr)	112	113	77 - 120
Toluene-d8 (Surr)	97	100	80 - 125

Client: Waste Management

Job Number: 280-85464-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 280-333972

Method: 8260B
Preparation: 5030B

MS Lab Sample ID:	280-85437-G-1 MS	Units: ug/L	
Client Matrix:	Water		
Dilution:	1.0		
Analysis Date:	07/18/2016 1047		
Prep Date:	07/18/2016 1047		
Leach Date:	N/A		

MSD Lab Sample ID:	280-85437-G-1 MSD
Client Matrix:	Water
Dilution:	1.0
Analysis Date:	07/18/2016 1107
Prep Date:	07/18/2016 1107
Leach Date:	N/A

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
1,1,1-Trichloroethane	ND	5.00	5.00	5.92	5.90
1,1-Dichloroethane	ND	5.00	5.00	5.59	5.62
1,1-Dichloroethene	ND	5.00	5.00	5.61	5.70
1,2-Dichloropropane	ND	5.00	5.00	5.25	5.37
1,3-Dichlorobenzene	ND	5.00	5.00	4.86	5.10
Benzene	ND	5.00	5.00	5.38	5.47
Bromodichloromethane	ND	5.00	5.00	5.41	5.52
Carbon tetrachloride	ND	5.00	5.00	5.97	5.95
Chlorobenzene	ND	5.00	5.00	5.08	5.25
Chloroform	ND	5.00	5.00	5.73	5.79
Ethylbenzene	ND	5.00	5.00	ND	5.14
Methylene Chloride	ND	5.00	5.00	5.31	5.36
Tetrachloroethene	ND	5.00	5.00	5.22	5.43
Toluene	ND	5.00	5.00	5.29	5.39
trans-1,2-Dichloroethene	ND	5.00	5.00	ND	ND
Trichloroethene	ND	5.00	5.00	5.36	5.43

Client: Waste Management

Job Number: 280-85464-1

Laboratory Chronicle

Lab ID: 280-85464-1 **Client ID:** RIG WATER

Sample Date/Time: 07/12/2016 11:00 Received Date/Time: 07/12/2016 15:55

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-85464-B-1		280-333972		07/18/2016 11:26	1	TAL DEN	DPI
A:8260B	280-85464-B-1		280-333972		07/18/2016 11:26	1	TAL DEN	DPI

Lab ID: 280-85464-2 **Client ID:** TRIP BLANK

Sample Date/Time: 07/12/2016 00:00 Received Date/Time: 07/12/2016 15:55

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-85464-A-2		280-333972		07/18/2016 09:28	1	TAL DEN	DPI
A:8260B	280-85464-A-2		280-333972		07/18/2016 09:28	1	TAL DEN	DPI

Lab ID: MB **Client ID:** N/A

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	MB 280-333972/6		280-333972		07/18/2016 08:22	1	TAL DEN	DPI
A:8260B	MB 280-333972/6		280-333972		07/18/2016 08:22	1	TAL DEN	DPI

Lab ID: LCS **Client ID:** N/A

Sample Date/Time: N/A Received Date/Time: N/A

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	LCS 280-333972/4		280-333972		07/18/2016 08:03	1	TAL DEN	DPI
A:8260B	LCS 280-333972/4		280-333972		07/18/2016 08:03	1	TAL DEN	DPI

Lab ID: MS **Client ID:** N/A

Sample Date/Time: 07/11/2016 14:10 Received Date/Time: 07/12/2016 09:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-85437-G-1 MS		280-333972		07/18/2016 10:47	1	TAL DEN	DPI
A:8260B	280-85437-G-1 MS		280-333972		07/18/2016 10:47	1	TAL DEN	DPI

Client: Waste Management

Job Number: 280-85464-1

Laboratory Chronicle

Lab ID: MSD **Client ID: N/A**

Sample Date/Time: 07/11/2016 14:10 Received Date/Time: 07/12/2016 09:30

Method	Bottle ID	Run	Analysis Batch	Prep Batch	Date Prepared / Analyzed	Dil	Lab	Analyst
P:5030B	280-85437-G-1 MSD		280-333972		07/18/2016 11:07	1	TAL DEN	DPI
A:8260B	280-85437-G-1 MSD		280-333972		07/18/2016 11:07	1	TAL DEN	DPI

Lab References:
TAL DEN = TestAmerica Denver

TestAmerica Denver
4955 Yarrow Street
Arvada, CO 80002
Phone (303) 736-0100 Fax (303) 431-7171

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Cathryn Stewart	Lab PM: Sara, Betsy A	Carrier Tracking No(s):	COC No: 280-23617-7662.1
Client Contact: Tom Schweitzer	Phone: 303-695-4660	E-Mail: betsy.sara@testamericainc.com		Page:
Company: Waste Management				Job #:
Address: 2400 West Union Avenue	Due Date Requested: Standard	Analysis Requested		Preservation Codes: A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
City: Englewood	TAT Requested (days):			Other:
State, Zip: CO 80110				
Phone: 303 914-1445	PO #: 162063.01			
Email: Tschweitzer@wm.com	WO #:			
Project Name: 555|Denver/Arapahoe Chem. Event Desc: ~~Semi Annual Wells - May Nov~~ Well Installation	Project #: ~~26003040~~			
Site: Colorado	SSOW#:			

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B	Total Number of containers	Special Instructions/Note:
			Preservation Code:				N		
Rig Water	07/12/16	1100	G	W			X		3 VOAs
Trip Blank	07/12/16	—	—	W			X		1 VOA

280-85464 Chain of Custody

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☑ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Cathryn Stewart	07/12/16 1400	SRES		7/12/16 1555	TAC
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	7/12/16 1555	TAC		7/12/16 1555	TAD
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		16.4+0.0 IR#5 DW 7/12/16

07/29/2016

Login Sample Receipt Checklist

Client: Waste Management

Job Number: 280-85464-1

Login Number: 85464
List Number: 1
Creator: White, Denise E

List Source: TestAmerica Denver

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	N/A	
The cooler's custody seal, if present, is intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	N/A	

ATTACHMENT 6

COPY OF WELL ABANDONMENT REPORT (FORM GWS-09) (NOT SUBMITTED TO OSE BUT TO BE RETAINED IN WMC FILES)

Form No. GWS-09 4/2012	**STATE OF COLORADO, OFFICE OF THE STATE ENGINEER** 821 Centennial Bldg., 1313 Sherman St., Denver, CO 80203 (303) 866-3581 Fax (303) 866-3589 dwrpermitsonline@state.co.us	For Office Use Only

WELL ABANDONMENT REPORT

Use to report plugging and sealing of permitted wells, monitoring and other holes. This form can be computer generated, typed or printed in black or blue ink. Instructions and plugging standards are on reverse side of form.

Well Permit Number of the well being plugged NA **or**
MH File Number MH- NA **Hole ID #/Name** P-114A

Individual/Company responsible for plugging and sealing the well:

Name(s) Swift River Environmental Services

Mailing Address 26 West Dry Creek Circle, Suite 470

City, St., Zip Littleton, CO 80120

Phone (area code & no.) 303-695-4660 Email: cathryn.stewart@swiftriveres.com

Well (Hole) Owner:

NAME(S) Waste Management of Colorado, Inc. Phone (include area code) 303-914-1445

Mailing Address, City, St., Zip 2400 West Union Avenue, Englewood, CO 80110

ACTUAL WELL LOCATION: County Arapahoe County

Property Address, City, St, Zip 3500 South Gun Club Road, Aurora, CO 80018

NW 1/4 of the SE 1/4, Sec. 32, Twp. 4 ☐ N. or ☒ S., Range 65 ☐ E. or ☒ W., 6th P.M.

Distance from Section Lines 1900.0 Ft. from ☐ N. or ☒ S., 2080.6 Ft. from ☒ E. or ☐ W. Line.

Subdivision Name NA Lot NA, Block NA, Filing/Unit NA

Optional: GPS well location information in UTM format. You must check GPS unit for required settings as follows:

Format must be UTM, zone 12 ☐ or zone 13 ☐; Units must be meters; Datum must be NAD83; Unit must be set to true north.

Easting --- **Northing** ---

I (we) report the existing well (hole) was plugged and sealed on the date of 07/14/16 for the following reason(s):

☐ The well was plugged and sealed as required under Well Permit Number _____.

☐ The well was not in use and was plugged and sealed.

☒ Other (please explain) Well integrity was compromised and well was abandoned.

The well was plugged with the following materials placed at the indicated intervals:

Amount and Type of Material	**Method of Placement**	**Interval**
Sand (Vol = 1.3 cubic ft)	Direct	from 75 feet to 136 feet
Grout (Vol = 1.6 cubic ft)	Direct	from 1 feet to 75 feet
Soil (Vol = 1.4 cubic ft)	Direct	from 0 feet to 4 feet
Intervals of casing removed/ripped in feet		from _____ feet to _____ feet

Report must be signed or name entered by person who performed the well plugging work or by the well owner if this person is unknown or not reachable. I (we) have read the statements made herein, know the contents thereof, and that they are true to my (our) knowledge.

Sign or enter full name	If signing print name & title	Date (mm/dd/yyyy)
	Cathryn Stewart, Project Manager	

It is the responsibility of the well owner to have the well/hole properly plugged and sealed. The Well Construction Contractor is responsible for notifying the owner of this requirement.

Attachment B

Waste Analysis Plan

1.0 POST-CLOSURE WASTE STREAM

There will be two waste streams during post-closure of the facility:

- liquids that will be pumped from the reconstructed cell sumps, and
- groundwater which will be pumped during semi-annual detection groundwater monitoring sampling events.

1.1 Leachate

A. Primary Leachate Collection Sump

The source of water for the leachate that is being collected in the primary leachate collection sump of the reconstructed cell is precipitation that fell on the reconstructed cell from the time that construction of the primary liner system began until the first layer of the cap system (two feet of compacted clay) was complete on November 8, 1988. There were only three significant precipitation events during that time period.

The first rainfall (approximately 1-1/2 inches on June 13, 1988) occurred after placement of the 60 mil high density polyethylene (HDPE) synthetic liner over the 18-inch clay liner when the 12-inch sand and geotextile leachate collection system was about 70% complete. Water from this rainfall event saturated the sand drainage layer.

The second and third rainfall events (approximately 1/2 inch on August 3, 1988, and approximately 1/2 inch on September 12, 1988) occurred after all the Pad C material had been placed in the reconstructed cell and after this material was covered with a temporary clay cover that was constructed out of the Pad C liner material. This temporary cover was constructed with a depression for collecting any rainwater that fell on the reconstructed cell. Water from the second and third precipitation events that collected in this depression was pumped within 12 hours into Pond 3 for subsequent stabilization and it is, therefore, unlikely that water that collected in the depression seeped through the temporary clay cover.

Thus, on the basis of this construction history, the water that collects in the primary leachate collection sump is expected to be clean water that has come in contact with the sand layer only. There is a possibility, however, that some of the water from the second and third precipitation events may have percolated through the temporary two-foot clay cover, and after slowly migrating through the waste material underlying the temporary clay cover, this water will ultimately be collected in the primary

leachate collection sump. Additionally, other nominal precipitation events occurring during the placement of the Pad C waste material into the reconstructed cell may result in contaminated leachate reaching the primary leachate collection sump.

B. Secondary Leachate Collection sump

There is no indication that any leachate from the primary leachate collection system has leaked into the secondary leachate collection system. Thus, leachate collecting in the secondary leachate collection system is expected to consist solely of construction water within the 18-inch compacted clay layer portion of the primary composite liner. The weight of the waste placed in the reconstructed cell has squeezed, and will continue to squeeze, some of the construction water out, and that water drains to and is collected in the secondary leachate collection sump. None of that water should come into contact with hazardous waste.

C. Management of Leachate

The collected leachate was, from the beginning, shipped off-site for disposal at a hazardous waste facility as a precaution in the event that some of the sump liquids actually contacted waste materials and therefore could be classified as an F039 hazardous waste. However, the Hazardous Waste Commission conditionally delisted this leachate on or about November 10, 1998. [6 CCR 1007-3, Part 261, Appendix IX, Delisting No. 003]. Once removed from the sumps, the leachate will be managed (e.g., stored, used, disposed) in accordance with the conditional delisting.

1.2 Groundwater

The second waste stream will be groundwater which will be collected during the groundwater monitoring programs. Groundwater will be stored in drums during detection groundwater monitoring sampling events and will be disposed of appropriately after receiving analytical results. If the groundwater does not contain any contaminants above background (in accordance with Appendix F, including QA/QC verification and resampling as appropriate), it may be disposed of on the ground and such disposal area will not be considered a solid waste management unit. If the groundwater contains contaminants above background (as determined in accordance with Appendix F, including QA/QC verification and resampling as appropriate), it will be disposed of in accordance with applicable requirements.

Attachment C

Inspection and Maintenance Plan

1.0 INSPECTION AND MAINTENANCE PLAN

Post-closure inspections will be conducted at the reconstructed cell facility and documented by the Permittee for the duration of the post-closure care period. A list of the inspections to be performed, their frequency and maintenance time frames will be kept by the Permittee. The inspection program is detailed below.

INSPECTION AND MAINTENANCE PLAN

(a) Groundwater wells visually inspected and monitored semiannually for:

1. Broken seals or caps;
2. Nonfunctional pumps;
3. Cracked casings;
4. Other broken or malfunctioning equipment; and
5. Adequate labeling.

(b) Piezometers visually inspected semiannually for:

1. Broken seals or caps;
2. Cracked casings;
3. Other broken equipment; and
4. Adequately painted and labeled.

(c) Reconstructed cell cover visually inspected at least semi-annually for the duration of the post-closure care period, and after all extreme weather events (tornados and 25-year, 24-hour precipitation events) and if any accident (such as a plane crash) occurs at the reconstructed cell, for:

1. Cracks;
2. Holes;
3. Other breaches of the cell cap;
4. Rodent burrows;
5. Consistency of gravel cover;
6. Erosion of cap;
7. Evidence of subsidence; and
8. Plants and corresponding roots that may penetrate and jeopardize the integrity of the reconstructed cell cover, which will be managed by pulling, cutting or herbicides.

(d) Drainage channels and culverts inspected at least semi-annually for the duration of the post-closure care period, and after all extreme weather events and if any accident occurs at the reconstructed cell, for:

1. Blockages (such as excessive vegetation); and
2. Erosive damage.

(e) Perched water drain inspected at least semi-annually for the duration of the post-closure care period, and after all extreme weather events and if any accident occurs at the reconstructed cell.
(f) Benchmarks inspected semi-annually for any observable damage or movement.

(g) Security fence inspected at least semi-annually for:

1. Broken or cut sections in chain link or barbed wire;
2. Burrows under fence;
3. Damaged or defective locks; and
4. Signs and their visibility.

(h) Leachate collection system inspected at least semi-annually for the duration of the post-closure care period for:

1. Presence and depth of fluid in each of the primary and secondary sumps;
2. Nonfunctioning or broken pipe;
3. Nonfunctioning or broken sump cover;
4. Nonfunctioning or broken casing;
5. Nonfunctioning or broken pump.
6. Collect and analyze leachate samples collected from the primary and secondary sump for constituents and with the detection limits in Table G-1 of Appendix G.

The leachate will be pumped from the sumps on a periodic basis as necessary to prevent significant accumulation. Leachate will be removed from the primary and secondary sumps so that there will be no more than one foot of leachate above either the leachate removal liner system or the leachate detection liner system (exclusive of the sumps themselves). The amount of leachate removed and rate of leachate generation will be determined for each sump, recorded in the inspection logs each time the sumps are pumped, and reported annually to the Director, or designee.

(i) All emergency response equipment listed in the Contingency Plan (Appendix D) must be inspected at least semi-annually.

Repairs or replacements to all of the above will be initiated within thirty (30) calendar days from the date that they are noted. Defective locks on gates will be repaired or replaced immediately.

Figures C-1 to C-3 at the end of this section present the inspection checklists. These checklists will be filled out every time the Permittee inspects the reconstructed cell facility during the post-closure care period. The checklists may vary from those contained in this section, provided the same information is contained in the revised forms. Figure C-4 presents the repair certification that will be filled out for all repairs undertaken. Repairs will be conducted to return inspected item to their original function. The cell cover will be filled with appropriate soil and rock fill material after repairs. The checklists and repair certifications will be maintained in a file at the post-closure operational office designated by the Permittee and copies will be sent to the Director, or designee, on an annual basis.

FIGURES

Date: _____

Inspected by: _____

Supervisor: _____

Page _____ of _____

INSPECTION FORM FOR
MONITORING WELLS, PIEZOMETERS
AND BENCHMARKS

Purpose of Inspection: _____

WELL NUMBER	DATE OF INSPECTION	DEPTH TO WATER	CONDITION/REMARKS*
P-112			
P-113			
P-114A			
P-115			

Inspect wells for broken seals or caps, nonfunctional pumps, cracked casings, other broken or malfunctioning equipment, and labeling.

PIEZOMETER NUMBER	DATE OF INSPECTION	DEPTH TO WATER	CONDITION/REMARKS*

Inspect piezometers for broken seals or caps, cracked casings, other broken equipment, painting and labeling.

BENCHMARK INSPECTION	DATE OF INSPECTION	CONDITION/REMARKS*

Inspect benchmarks for any observable damage or movement.

Any repair required? If yes, notify the Project Manager and complete a repair certification.	YES	NO

*If additional explanation is required, complete on separate page(s) and attach hereto.

Figure C-1

Date: _____

INSPECTION FORM FOR THE LEACHATE COLLECTION SYSTEM

Inspected by: _____

Supervisor: _____

Page _____ of _____

Purpose of Inspection: _____

SUMP	DATE OF INSPECTION	CONDITION/REMARKS*
Primary		
Secondary		

Inspect the leachate collection system for presence and depth of fluids in the primary sump, nonfunctioning or broken pipe(s), nonfunctioning or broken sump cover(s), nonfunctioning or broken casing, and nonfunctioning or broken pump(s).

If liquids are present in the primary sump, provide information specified below as applicable.

Depth to bottom of sump _____
Depth to liquid _____
Depth of liquid _____

Liquids generation rate (to be calculated when the sump is pumped) _____
Gallons of liquid removed _____
Were liquids samples taken for analysis? _____

If liquids are present in the secondary sump, provide information specified below as applicable.

Depth to bottom of sump _____
Depth to liquid _____
Depth of liquid _____
Samples Collected for Analysis

Liquids generation rate (to be calculated when the sump is pumped) _____
Gallons of liquid removed _____
Were liquids samples taken for analysis? _____

Any repair required? If yes, notify the Project Manager and complete a repair certification.	YES	NO

*If additional explanation is required, complete on separate page(s) and attach hereto.

Figure C-2

INSPECTION FORM FOR THE
RECONSTRUCTED CELL COVER,
DRAINAGE CHANNELS, THE PERCHED
WATER DRAIN, AND SECURITY FENCE

Date: _____
Inspected by: _____
Supervisor: _____
Page _____ of _____

Purpose of Inspection: _____

	DATE OF INSPECTION	CONDITION/REMARKS*
RECONSTRUCTED CELL COVER		
Inspect cell cover for: cracks, holes, other breaches of the cap, rodent burrows, consistency of gravel cover, erosion of cap, and evidence of subsidence.		

DRAINAGE CHANNEL	DATE OF INSPECTION	CONDITION/REMARKS*
DITCH 'A'		
DITCH 'B'		
Inspect ditches for blockages and erosive damage.		

	DATE OF INSPECTION	CONDITION/REMARKS*
PERCHED WATER DRAIN		
Inspect drain for blockages.		

	DATE OF INSPECTION	CONDITION/REMARKS*
SECURITY FENCE		
Inspect security fence for broken or cut sections in chain link or barbed wire, burrows under fence, damaged or defective locks, and signs.		

Any repair required? If yes, notify the Project Manager and complete a repair certification.	YES	NO

*If additional explanation is required, complete on separate page(s) and attach hereto.

Figure C-3

Date: _____

Repaired by: _____

Supervisor: _____

Page _____ of _____

REPAIR CERTIFICATION

Item Being Repaired: _____

Description of Repair: _____

Repair began on: _____ and was completed on: _____

Other Comments: _____

Figure C-4

Attachment D

Contingency Plan

1.0 FACILITY DESCRIPTION

The facility contains only one RCRA regulated hazardous waste management unit which is the closed reconstructed cell. In addition, the facility has a groundwater monitoring system, drainage channels and two leachate collection systems.

2.0 IMPLEMENTATION OF RESPONSE PROCEDURES

During the post-closure care period, at least one individual will be on call (i.e., available to arrive at the facility or respond to an emergency within a short, less than three hour, period of time) at all times. This person, designated the Emergency Coordinator (EC) or their alternate, will be familiar with all aspects of the Contingency Plan, the location of all records for the facility and the facility layout. In addition, the EC is responsible for coordinating all emergency response measures and has been granted the authority to commit the resources needed to carry out the Contingency Plan.

Since the facility is closed and the only regulated hazardous waste management unit has been capped, the probability of a fire or explosion at the site is very remote. The only type of emergency of concern at the facility would involve the release of hazardous materials to the surrounding environment (i.e., air, soil or groundwater) which could occur during a groundwater sampling event, leachate removal operations or catastrophe. In the event of such an emergency, response activities will be initiated immediately following observation of the event. The EC will assess the situation, determine whether to implement the Contingency Plan, and direct response activities as appropriate.

2.1 Observation

In case of an imminent or actual release of hazardous waste, the person observing the event will:

- Notify the Emergency Coordinator and report his/her name and the location and the nature of the incident.

The names, addresses and telephone numbers of the EC and his/her alternates and agencies that might be notified are listed as follows:

Mr. Mickey Muterspaugh: Emergency Coordinator
Denver Arapahoe Disposal Site
3500 S. Gun Club Road
Aurora, Colorado 80018
(720) 876-2630 (office)
(720) 498-5175(cell)

Mr. Patrick Mekled: Alternate Emergency Coordinator
Denver Arapahoe Disposal Site
3500 S. Gun Club Road
Aurora, Colorado 80018
(720) 876-2629 (office)
(303) 435-2812 (cell)

2.2 Incident Assessment

The EC, or his/her representative, will immediately identify to the extent possible the character, exact source, amount and areal extent of any released materials by observation, records review and, if necessary, chemical analysis. While characterizing the release, the EC will assess possible direct and indirect hazards to human health and the environment that may result from the release. Based on a visual inspection of the release and reference to data sources, the EC will assess the following:

- Could the event threaten human health or the environment? If so, the Contingency Plan will be implemented.
- Can personnel control the emergency? If not, the EC will immediately notify the appropriate federal, state and local agencies to request assistance.

No scenarios that would require evacuation of the facility or the surrounding area are envisioned.

3.0 IMPLEMENTATION OF CONTINGENCY PLAN

When the decision has been made to implement the Contingency Plan, the EC (or his/her designee) will immediately notify the following:

- Facility personnel, if they have not already been notified;
- The National Response Center (NRC) at (800) 424-8802 and report the following information:
    - Name and telephone number of reporter;
    - Name and address of facility;
    - Time and type of incident;
    - Name and quantity of material(s) involved, to the extent known;
    - The extent of injuries, if any; and
    - Possible hazards to human health and the environment outside the facility.

- Colorado Department of Public Health and Environment at the emergency number: (303) 692-3020 or 756-4455 (after hours). The report must include the same information as the report to the NRC.

- Arapahoe County Sheriff's Department (telephone 911), if appropriate.

In addition, the EC will direct coordination of first aid activities (if any injuries are involved) and the emergency response activities of other personnel.

4.0 RESPONSE ACTIVITIES

4.1 Emergency Coordinator

Containment and control activities are initiated and directed by the EC. During an emergency, the EC must take all reasonable measures necessary to ensure that releases do not occur, recur or spread. These measures will include, where appropriate, the collection and containment of released material (e.g., leachate, contaminated groundwater).

The EC has the authority to obtain assistance in the event of an emergency. For a release, the EC will mobilize personnel to:

- Assemble the required response equipment, such as protective clothing, gear and pumping equipment;

- Determine the most appropriate containment method; and

- Coordinate activities of supervisory personnel, maintaining constant communication with them and the response teams.

4.2 Standard Response Procedures

Individuals discovering the incident will initiate the following standard response procedures immediately. These procedures only establish general guidelines. The EC has the final authority over all response procedures once he/she has arrived at the area of the incident.

- The person discovering an incident will alert others who might be in danger and call for backup support.

- All response personnel will have proper safety equipment.

4.3 Equipment

At a minimum, fire extinguishers, absorbent, shovels, personal protective clothing, decontamination equipment, communication devices (e.g., radios, cell phones, etc.) and first-aid kits will be kept in vehicles used by personnel conducting inspections, maintenance, leachate collection handling and groundwater sampling. In the event of an emergency, the Permittee or individual(s) discovering the incident will deploy necessary and appropriate emergency equipment.

5.0 POST-EMERGENCY PROCEDURES

Post-emergency procedures are designed to prevent recurrence, to clean up and dispose of residuals and to provide for personnel debriefing.

5.1 Incident Reporting

Within 15 days of the incident, a written report of the incident must be filed with the CDPHE and the U.S. EPA Regional Office:

Colorado Department of Public Health and Environment
Hazardous Materials and Waste Management Division
HMWMD-HWC-B2
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

Regional Administrator
Environmental Protection Agency
Region VIII
1595 Wynkoop Street
Denver, Colorado 80202-1129

This report must include:

- Name, address and telephone number of the Permittee;
- Name, address and telephone number of facility;
- Date, time and type of incident;
- Name and quantity of material(s) involved;
- The extent of injuries, if any;

- An assessment of actual or potential hazards to human health or the environment, where this is applicable; and

- Estimated quantity and disposition of recovered material that resulted from the incident.

5.2 Prevention of Recurrence

The EC will take all reasonable measures to identify the cause of the incident and take steps to ensure that the incident does not recur. These steps may include; as appropriate:

- Visual inspections for leaks, cracks and perforations to the reconstructed cell; and

- Collection and isolation of all leachate from the primary and secondary sumps and groundwater monitoring wells.

5.3 Treatment and Disposal of Released Materials and Residue Cleanup

Once the emergency situation has ended, the EC will initiate clean-up and disposal of contaminated materials as soon as possible to avoid further contamination. Contaminated material will be analyzed, stored, loaded, manifested, transported and disposed of in accordance with applicable state and federal regulations.

5.4 Equipment Decontamination and Maintenance

After cleanup procedures are completed, all equipment that was used during the cleanup will be decontaminated and readied for future use. Pressure washing (with collection of rinse water) is the most likely decontamination method. Rinse water will be treated as a waste and disposed of appropriately.

5.5 Personnel Debriefing

The EC will conduct debriefings of personnel and local authorities, as appropriate, to assess preparedness and prevention activities, response activities and casualty control. Based on this review, suggestions for revisions to the Contingency Plan, if any, will be reviewed and implemented where appropriate.

Attachment E

Environmental Covenant

This property is subject to an Environmental Covenant held by the Colorado Department of Public Health and Environment pursuant to section 25-15-321, C.R.S.

ENVIRONMENTAL COVENANT

Waste Management of Colorado, Inc. ("WMC") grants an Environmental Covenant ("Covenant") this _____ day of _____, 2019 to the Hazardous Materials and Waste Management Division of the Colorado Department of Public Health and the Environment ("Department") pursuant to § 25-15-321 of the Colorado Hazardous Waste Act, §§ 25-15-101, *et seq*. ("CHWA"). The Department's address is 4300 Cherry Creek Drive South, Denver, Colorado 80246-1530.

WHEREAS, WMC is the owner of a certain facility commonly referred to as the DACWPF Reconstructed Cell Facility ("Facility"), located at 25700 East Yale Avenue, Aurora, Colorado, on property more particularly described in Exhibit A, attached hereto and incorporated herein by reference as though fully set forth (hereinafter referred to as the "Property"); and

WHEREAS, the Property has been used to manage hazardous waste at the Facility. The Facility is closed, the Department and WMC believe no hazardous wastes have been released from the Facility, and this Covenant is entered into to protect the Facility. The Facility is subject to a State issued Resource Conservation and Recovery Act, 42 U.S.C. §§ 6926, et seq. ("RCRA") Permit pursuant to the CHWA; and

WHEREAS, a survey plat and a record of the type, location, and quantity of hazardous wastes disposed of at the Facility have been filed with the local zoning authority and with the Director of the Department; and

WHEREAS, the purpose of this Covenant is to ensure protection of human health and the environment by documenting the fact that hazardous wastes have been disposed at the Facility located on the Property and by restricting certain uses of the Property; and

WHEREAS, WMC desires to subject the Property to certain covenants and restrictions as provided in Article 15 of Title 25, Colorado Revised Statutes, which covenants and restrictions shall burden the Property and bind WMC and all parties now or subsequently having any right, title or interest in the Property, or any part thereof, and any persons using the land, as described herein, for the benefit of the Department, WMC, any subsequent owners of the Property, and the OWNER as defined below; and

NOW, THEREFORE, WMC hereby grants this Environmental Covenant to the Department, and declares that the Property as described in Exhibit A shall hereinafter be bound by, held, sold, and conveyed subject to the following requirements set forth in paragraphs 1 through 11, below, which shall run with the Property in perpetuity and be

binding on WMC and all parties now or subsequently having any right, title or interest in the Property, or any part thereof, and any persons using the land, as described herein. As used in this Environmental Covenant, the term OWNER means the then current record owner of the Property and, if any, any other person or entity otherwise legally authorized to make decisions regarding the transfer of the Property or placement of encumbrances on the Property, other than by the exercise of eminent domain.

1. Use restrictions.

a. OWNER must ensure that any and all uses of the Property do not interfere with any post-closure care activity for the Facility as specified by the provisions of the applicable RCRA permit or other enforceable document issued pursuant to the Colorado Hazardous Waste Regulations, 6 CCR 1007-3 § 100.10(d) (the "Permit"). A copy of the Permit will be found on file at the Department.

b. The use of the Property shall be restricted to managing the hazardous waste disposed at the Facility including, without limitation, the activities necessary to fulfill the requirements of the Permit.

c. Access to the Property shall be restricted, and access controls maintained, as required by the Permit.

d. Except as authorized by the Department or the Permit, no person shall: (i) remove or utilize groundwater from the existing wells on the Property; (ii) withdraw or utilize any surface water from the Property; (iii) construct any new groundwater well on the Property; or (iv) remove or utilize groundwater from such new well.

e. Except as authorized by the Department or the Permit, digging, drilling, or any other excavation or disturbance that will disturb the integrity of the final cover and liner systems at the Facility is prohibited.

f. Irrigation of the final cover is prohibited, except as approved by the Department, and weeds or other vegetation atop the final cover shall be controlled and removed in accordance with the Permit.

g. No structure may be built or placed on the final cover, except as authorized by the Department in writing.

2. Modifications.

This Covenant runs with the land and is perpetual, unless modified or terminated pursuant to this paragraph. OWNER may request that the Department approve a modification or termination of the Covenant. The request shall contain information

showing that the proposed modification or termination shall, if implemented, ensure protection of human health and the environment. The Department shall review any submitted information and may request additional information. If the Department determines that the proposal to modify or terminate the Covenant will ensure protection of human health and the environment, it shall approve the proposal. No modification or termination of this Covenant shall be effective unless the Department has approved such modification or termination in writing. Information to support a request for modification or termination may include one or more of the following:

a. a proposal to perform additional remedial work;
b. new information regarding the risks posed by the residual contamination;
c. information demonstrating that residual contamination has diminished;
d. information demonstrating that an engineered feature or structure is no longer necessary;
e. information demonstrating that the proposed modification would not adversely impact the remedy and is protective of human health and the environment; and
f. other appropriate supporting information.

3. Conveyances. OWNER shall notify the Department at least fifteen (15) days in advance of the closing on any proposed sale or other conveyance of any interest in any or all of the Property.

4. Notice to Lessees. The OWNER agrees to incorporate either in full or by reference the restrictions of this Covenant in any leases, licenses, or other instruments granting a right to use the Property.

5. Notification for proposed construction and land use. The OWNER shall notify the Department simultaneously when submitting any application to a local government for a building permit or change in land use.

6. Inspections. The Department shall have the right of entry to the Property at reasonable times with prior notice for the purpose of determining compliance with the terms of this Covenant.

7. Third Party Beneficiary. WMC and the OWNER of the Property are third party beneficiaries with the right to enforce the provisions of this Covenant as provided in § 25-15-322, C.R.S.

8. No Liability. The Department does not acquire any liability under State law by virtue of accepting this Covenant.

9. Enforcement. The Department may enforce the terms of this Covenant pursuant to § 25-15-322, C.R.S. WMC and the OWNER may file suit in district court to enjoin actual or threatened violations of this Covenant.

10. Owner's Compliance Certification. The OWNER shall execute and return a certification form provided by the Department, on an annual basis, detailing the OWNER's compliance, and any lack of compliance, with the terms of this Covenant.

11. Notices. Any document or communication required under this Covenant shall be sent or directed to:

Hazardous Materials and Waste Management Division
Colorado Department of Public Health and the Environment
4300 Cherry Creek Drive South
Denver, Colorado 80246-1530

WMC has caused this instrument to be executed this ____ day of _____, 2019.

Waste Management of Colorado, Inc.

By: _____
Title:_____

STATE OF COLORADO)
) ss:
COUNTY OF _____)

The foregoing instrument was acknowledged before me this ___day of _____, 2009 by _____ on behalf of Waste Management of Colorado, Inc.

_____
Notary Public

_____
Address

My commission expires: _____

Accepted by the Colorado Department of Public Health and Environment this ____ day of _____, 2009.

By: _____
Title:_____

STATE OF COLORADO)
) ss:
COUNTY OF _____)

The foregoing instrument was acknowledged before me this ___day of _____, 2009 by _____ on behalf of the Colorado Department of Public Health and Environment.

_____
Notary Public

_____
Address

My commission expires: _____

EXHIBIT A

LEGAL DESCRIPTION

A PARCEL OF LAND LOCATED IN THE NORTH ONE-HALF OF THE SOUTHEAST ONE-QUARTER OF SECTION 32, TOWNSHIP 4 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF ARAPAHOE, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 32;

THENCE N00°12'03"E ALONG THE EAST LINE OF THE SOUTHEAST ONE-QUARTER OF SAID SECTION 32, WITH ALL BEARINGS HEREIN RELATIVE THERETO, A DISTANCE OF 1324.26 FEET TO THE SOUTHEAST CORNER OF THE NORTH ONE-HALF OF THE SOUTHEAST ONE-QUARTER OF SAID SECTION 32;

THENCE N89°49'00"W ALONG THE SOUTH LINE OF THE SAID NORTH ONE-HALF OF THE SOUTHEAST ONE-QUARTER OF SECTION 32, A DISTANCE OF 943.86 FEET TO THE POINT OF BEGINNING;

THENCE CONTINUING N89°49'00"W ALONG THE SAID SOUTH LINE OF THE NORTH ONE-HALF OF THE SOUTHEAST ONE-QUARTER OF SECTION 32, A DISTANCE OF 1300.00 FEET;

THENCE N00°18'53"E, A DISTANCE OF 1019.30 FEET;

THENCE N39°45'14"E, A DISTANCE OF 236.50 FEET,

THENCE S89°49'37"E, A DISTANCE OF 756.88 FEET;

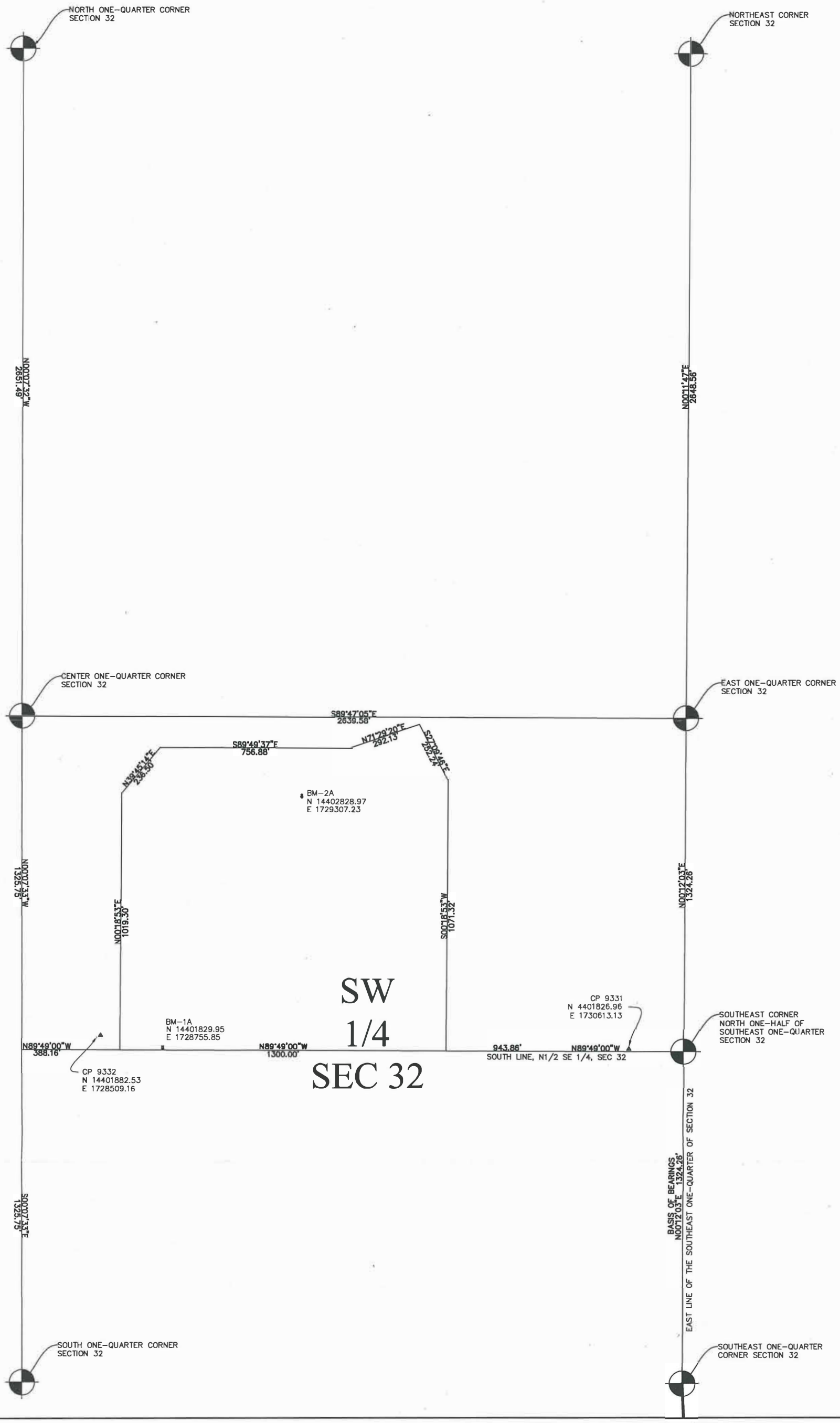
THENCE N71°29'20"E, A DISTANCE OF 292.13 FEET;

THENCE S27°09'46"E, A DISTANCE OF 252.24 FEET;

THENCE S00°18'53"W, A DISTANCE OF 1071.32 FEET TO THE POINT OF BEGINNING,

CONTAINING A CALCULATED AREA OF 1,559,303 SQUARE FEET OR 35.797 ACRES.

Dwg Name: N:\08\083-81869\LEGAL DESCRIPTIONS.dwg
Layout Name: 11x17 Portrait Machine: DEN1-L-ASCHWEIT
Last Update: Apr 27, 2009 13:35 By: AMSchweitzer
Last Plot: Apr 29, 2009 10:31 By: AMSchweitzer



REFERENCE

LEGAL DESCRIPTION PROVIDED IN UTM, ZONE 13 BY ED SILVER OF NOLTE ASSOCIATES.

Golder Associates
DENVER, COLORADO

LEGAL DESCRIPTION AND BENCHMARKS

FIGURE E-1

Attachment F

Groundwater Monitoring Program and Statistical Evaluation Procedures

1.0 POINT OF COMPLIANCE

The point of compliance for post-closure groundwater monitoring is the vertical plane located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer (6 CCR 1007-3, Section 264.95). In this case, the waste management area is defined as that area projected in the horizontal plane on which waste was placed into and on which liners and caps were constructed for the reconstructed cell. Thus, the designated point of compliance for the reconstructed cell is just downgradient of the reconstructed cell. See Figure 8.

2.0 DETECTION MONITORING PROGRAM

2.1 General

The purpose of detection monitoring is to detect the release of hazardous waste constituents from the reconstructed cell at the designated point of compliance, should any release occur. The elements of the detection monitoring program include the groundwater monitoring wells, indicator parameters, and background and detection monitoring.

2.2 Groundwater Monitoring Wells

The groundwater monitoring well network for post-closure care detection monitoring is designed to detect releases of contamination in the uppermost aquifer at the designated point of compliance and to assess the direction of groundwater flow in the vicinity of the reconstructed cell. Six groundwater monitoring wells (P-112, P-113, P-114, P-114A, P-114A-R, and P-115) have been used to date. Four groundwater monitoring wells are currently used, and will continue to be used, to collect groundwater samples, since P-114A-R has replaced P-114 and P-114A. Well P-112 is the designated upgradient monitoring well, whereas the other three wells are the designated downgradient wells. However, due to the documented spatial variability of the groundwater, detection monitoring is based on intra-well comparisons (i.e., the data from each well is compared to the background value for that well).

The spacing of the downgradient monitoring wells located in the lower sandstone unit was based on the hydrogeologic characterization conducted by Golder. A channel sand was encountered (lower sandstone) at approximately 80 feet below ground surface. Wells were positioned in this channel sand located beneath the reconstructed cell for monitoring the entire width, including the fringes, on the

downgradient side of the reconstructed cell. Well P-114A-R is (and P-114 and P-114A formerly were) located in the center of the channel sand, while P-113 and P-115 are located on the fringes of the channel.

All monitoring wells were completed, and will be maintained, to ASTM Standard Guide D5092-04, "Standard Practice for Design and Installation of Ground Water Monitoring Wells." Additionally, all of these wells are designated as RCRA monitoring points and, as such, were designed to comply with 6 CCR 1007-3, Part 264, Subpart F.

Any wells deleted from the monitoring program must be plugged and abandoned in accordance with ASTM D5092-04. Well plugging and abandonment methods and certification will be submitted to the Director, or designee, within one hundred twenty (120) days from the date the wells are removed from the monitoring program.

2.3 Detection Monitoring Indicator Parameters

Detection groundwater monitoring requires a suite of parameters be established for analyses that provide a reliable indication of the presence of hazardous constituents in groundwater. The parameters selected should be the most accurate and reliable indicators of the leading edge of contamination and should provide minimal false positive and false negative statistical results.

The constituents (and their respective reporting limits) listed in the following Table F-1 will be used as indicator parameters of groundwater contamination during post-closure care detection monitoring:

TABLE F-1

GROUNDWATER INDICATOR PARAMETER AND WASTE CONSTITUENT LIST
("Reporting Limits" are in µg/L = micrograms per liter)

CONSTITUENT	REPORTING LIMIT
pH, Temperature, Conductivity	NA
Total Suspended Solids	NA
Benzene	5.0
Bromoform	4.0
Carbon Tetrachloride	1.0
Chlorobenzene	5.0
Chlorodibromomethane	5.0
Chloroethane	10.0
Chloroform	3.5
Dichlorobromoethane	1.0

CONSTITUENT	REPORTING LIMIT
aka (Bromodichloromethane)	
1,1-Dichloroethane	5.0
1,2-Dichloroethane	1.0
1,1- Dichloroethylene aka (Dichloroethene)	5.0
1,2-Dichloropropane	1.0
cis-1,3-Dichloropropylene aka (Dichloropropene)	5.0
Ethylbenzene	5.0
Methyl bromide aka (Bromomethane)	10.0
Methyl chloride aka (Chloromethane)	10.0
Methyl ethyl ketone*	100.0
1,1,2,2-Tetrachloroethane	5.0
Tetrachloroethylene aka (Tetrachloroethene), (Perchloroethene)	5.0
Toluene	5.0
1,2-Trans-dichloroethene	10.0
1,1,1-Trichloroethane	5.0
1,1,2-Trichloroethane	3.0
Trichloroethylene aka (Trichloroethene)	5.0
Vinyl Chloride	2.0
PFOA/PFOS**	0.01
Arsenic	10.0
Barium	200.0
Cadmium	5.0
Chromium (Total)	10.0
Lead	5.0
Mercury	0.2
Selenium	5.0
Silver	25.0

*Only to be analyzed if leachate in secondary sump exceeds the detection limit in Table G-1
**Only to be analyzed if leachate in secondary sump exceeds the action limit in Table G-1

2.4 Groundwater Sampling

All sampling will be conducted pursuant to ASTM protocol or equivalent. The following steps will be performed for detection groundwater monitoring:

Step 1. Inspection. Prior to purging or sampling, each monitoring point will be inspected. The condition of the sampling equipment and the well structure which could affect the collection system will be noted.

Step 2. Static Water Level Measurement. Prior to purging, the static water level will be measured and recorded until reproducible results are obtained. The static water level will be measured as the depth to water in the well from the top of the casing and will be recorded to the nearest 0.01 foot. Water level probes, which were calibrated when the wells were installed and need no additional calibration, will be inspected for damage prior to each sampling event.

Step 3. Well Purging. Monitoring wells will be purged prior to sample collection in order to obtain representative samples of the formation water rather than the stagnant water from the well casing. Purging completion is based on achieving stabilization of the water level within the well and water quality field indicator parameters measured during purging. Pump flow rates should be selected to approximate the yield of the well so that a stabilized pumping water level is achieved as quickly as practical, thus expediting the stabilization of the field indicator parameters. Field indicator parameter measurements should be initiated when purging begins and continued at regular intervals until stabilization is achieved. Purged water will be stored in 35-gallon or 55-gallon drums and disposed of appropriately following review of the laboratory analytical results.

Step 4. Sample Withdrawal. Once stabilization has been achieved during purging, sampling can be conducted at the same pumping rate or at a lower flow rate if desired. If a sufficient amount of water is unobtainable for all analyses, the priority of analysis will be VOCs first and then metals. If a sufficient amount of water is unobtainable for any analysis, the well will be considered dry, and the Permittee will not be considered out of compliance for that sampling event.

Step 5. Sample Handling. Samples for VOCs will be unfiltered and unpreserved in accordance with Colorado requirements. Samples for metals will have the appropriate acid preservative added in the field and will be filtered through a 0.45 micron membrane filter prior to preservation. All bottles will be pre-labeled and supplied by a pre-approved laboratory. The VOC sample bottles will be 40 ml glass bottles which contain Teflon-lined septums in the cap. Each bottle will be filled slightly more than full prior to being capped to ensure that no head space exists once the bottle is capped. Sampling will be performed consistent with ASTM D4448-01 – “Standard Guide for Sampling Ground-water Monitoring Wells” or equivalent. Sampling for PFOA/PFOS will be conducted in general accordance with the February 8, 2019 Groundwater Screening Proposal, if required. Immediately after sample collection, bottles will be placed in sealed, insulated shuttles, and packed with ice to cool the samples to a temperature of 4°C or less. The shuttles will be shipped to the laboratory for arrival within 72 hours.

Step 6. Chain-of-Custody Procedures. The following chain-of-custody program will be used to trace the possession and handling of the individual samples. Samples from the same sample point that are placed in more than one sample cooler require a Chain-of-Custody Record in each sample cooler. Any problems with the sample cooler's contents will also be noted on the form. Upon receipt of the sample cooler by the lab, the condition of the samples, temperature, date, and time will be recorded on the Field Chain-of-Custody Record by the log-in personnel receiving the sample coolers. The Field Chain-of-Custody Record indicates by bottle and analysis group whether samples are preserved. The sampling team must record the field filtration, preservative, and any deviations from normal preservation requirements on the Chain-of-Custody Record (the sampler will initial the forms if this information is preprinted on forms provided by the lab). Other Chain-of-Custody procedures are described in Section 2.6.

2.5 Laboratory Analytical Procedures

The laboratories approved for the detection groundwater monitoring program will use approved standard laboratory procedures as specified in EPA's Test Methods for Evaluating Solid Waste: Physical/Chemical Methods SW-846 2nd Edition, Standard Methods of Wastewater Analysis, or an equivalent method approved by the Department. TestAmerica Laboratories Inc. in Arvada, Colorado or a similar environmental laboratory will perform chemical analysis of the groundwater. The particular SW-846 test methods will be as follows:

CONSTITUENT	EPA SW-846 TEST METHOD
VOCs	8260B
Arsenic, Barium, Cadmium, Chromium (total), Lead, Silver, Selenium	6010B
Mercury	7470A
PFOA/PFOS*	537 Modified until 8328 is finalized

* To be analyzed if leachate in secondary sump is above action limit listed in Table G-1

2.6 QA/QC

Quality Assurance and Quality Control (QA/QC) procedures will be applied to both field and analytical laboratory data in order to ensure the reliability and validity of the data. The QA/QC procedures are described below.

Field blank samples will not be required if each of the wells sampled has dedicated sampling equipment. If dedicated sampling equipment is not used, one field blank sample will be taken for every ten groundwater samples collected or one per day during each sampling event, whichever is greater, to detect contamination that may be introduced: (1) in the field (either atmospheric or from specific sampling equipment); (2) in transit to or from the sampling site; (3) in sample container preparation, sample log-in, or sample storage stages within the laboratory; or (4) during sample processing and analysis within the confines of the laboratory. A complete set of sample containers will be supplied by the laboratory and reagent-free deionized water will be used for the preparation of blank samples. Groundwater sampling procedures will be simulated for the filling of field blank samples. The filled sample bottles will be packed with ice and shipped to the laboratory for analysis along with the groundwater samples.

One QA duplicate will be collected for every twelve groundwater samples collected or one during each sampling event, whichever is more frequent, to be used as a check on the precision of sampling and analytical procedures. During a sampling sequence, a blind duplicate sample will be taken from the selected monitoring well(s) simultaneously with the regular field sample and analyzed along with all samples. During subsequent sampling rounds, different well(s) will be selected and the same procedures will be used to obtain the duplicate(s).

The chain-of-custody record will be initiated at the time of sampling and will contain the well number, date and time of sampling, and the name of the sampler. This record will accompany each sample case and will be signed by all who handle sample containers. Sample transfers are noted on the record sheet for each sample. Upon receipt of samples at the laboratory, the shipping container will be examined, and the condition of samples, including temperature, will be recorded. The chain-of-custody procedures document sample transfer, sample possession, and sample integrity from collection through analysis. If samples are split and sent to multiple laboratories, a chain-of-custody record sheet will accompany each sample. Copies of chain-of-custody forms will be maintained at the laboratory conducting the analyses.

In addition, all laboratories will be required to maintain appropriate levels of quality control for all analyses performed.

2.7 Background Monitoring

A. VOCs

No VOCs have had a confirmed detection since interim status quarterly groundwater monitoring for VOCs began in 1990. As a result, the "background" value for each of the VOCs is set at the "reporting limit" ("RL") listed in Table F-1. The permit-required RL for each VOC listed in Table F-1 must be achieved when analyzing the samples.

B. Metals

The background values for metals are the control limits and non-parametric prediction limits computed using the procedures outlined in the prior permit. The current values are as follows:

Constituent	Units	Well	Background Value
Arsenic, total recoverable	UG/L	P-112	10.0000*
Arsenic, total recoverable	UG/L	P-113	10.0000*
Arsenic, total recoverable	UG/L	P-114A	10.0000*
Arsenic, total recoverable	UG/L	P-115	10.0000*
Barium, total recoverable	UG/L	P-112	27.4055
Barium, total recoverable	UG/L	P-113	22.9172
Barium, total recoverable	UG/L	P-114A	43.2311
Barium, total recoverable	UG/L	P-115	19.8164
Cadmium, total recoverable	UG/L	P-112	5.0000*
Cadmium, total recoverable	UG/L	P-113	5.0000*
Cadmium, total recoverable	UG/L	P-114A	5.0000*
Cadmium, total recoverable	UG/L	P-115	5.0000*
Chromium, total recoverable	UG/L	P-112	10.0000*
Chromium, total recoverable	UG/L	P-113	10.0000*
Chromium, total recoverable	UG/L	P-114A	14.1000*
Chromium, total recoverable	UG/L	P-115	10.0000*
Lead, total recoverable	UG/L	P-112	5.0000*
Lead, total recoverable	UG/L	P-113	5.0000*
Lead, total recoverable	UG/L	P-114A	5.0000*

Constituent	Units	Well	Background Value
Lead, total recoverable	UG/L	P-115	5.0000*
Mercury, total	UG/L	P-112	0.2000*
Mercury, total	UG/L	P-113	0.2000*
Mercury, total	UG/L	P-114A	0.2000*
Mercury, total	UG/L	P-115	0.2000*
Selenium, total recoverable	UG/L	P-112	5.0000*
Selenium, total recoverable	UG/L	P-113	5.0000*
Selenium, total recoverable	UG/L	P-114A	5.0000*
Selenium, total recoverable	UG/L	P-115	5.0000*
Silver, total recoverable	UG/L	P-112	25.0000*
Silver, total recoverable	UG/L	P-113	25.0000*
Silver, total recoverable	UG/L	P-114A	25.0000*
Silver, total recoverable	UG/L	P-115	25.0000*

*Detection Frequency < 25%

These background values will be updated every other year using the additional data from the four most recent semi-annual monitoring events.

C. Others

No background values have been, or will be, calculated for field parameters pH, temperature, conductivity, or TSS because these parameters will not be subject to statistical analysis.

2.8 Detection Monitoring

Detection monitoring for VOCs began in 2000. Detection monitoring of metals began in 2003--six months after the completion of the background monitoring for metals. Detection monitoring will continue semi-annually through the post-closure care period or unless compliance or corrective action groundwater monitoring programs are established.

Due to the documented spatial variability of the natural groundwater chemistry, intra-well comparisons (i.e., the data from each well is compared to its own background history) will be the basis for determining if there is a statistically significant increase above background. For informational purposes, a comparison of the designated upgradient well chemistry to the designated downgradient wells chemistry will also be provided.

The actual process for detection monitoring will proceed in accordance with the following steps:

Step 1. Sample monitoring points semi-annually. The sampling points will be monitored for the indicator parameters listed in Table F-1, as well as for groundwater hydraulic information to establish flow rates and direction.

Step 2. Review QA/QC data to verify that acceptable field and laboratory data have been generated and recorded. If data is unsatisfactory, a Quality Assurance Review (QAR) will be performed and the affected well(s) resampled, if appropriate, within forty-five (45) calendar days of receipt of the sampling event data from the laboratory. If the data is satisfactory, the process will proceed to Step 3.

Step 3. Evaluate the sampling results by comparing the current sampling data for each well to the background value for that well. In the event the current sampling data exceeds the background values, verification resampling will occur by collecting up to two (2) additional samples to determine if the initial exceedance is statistically significant above background. If the first additional sample is below the background value, the initial exceedance is not verified and the well remains in detection monitoring. If the first and second additional samples are above the background value, the initial exceedance is verified and is determined to be statistically significant (i.e., represents a statistically significant increase above background – SSI).

Step 4. Identify SSIs, of any parameter. Also, for informational purposes, compare the current sampling data for the designated upgradient well to the designated downgradient wells. These evaluations will be performed within 45 days after receipt of final laboratory results for the sampling event including any additional samples required by Step 3.

Step 5. If the results from Step 3 show that no SSI has occurred, the detection monitoring program will continue, beginning again with Step 1 and the results will be reported annually. After four semi-annual samples, the background values for the metals will be updated using the additional data.

Step 6. If the results from Step 3 show that an SSI has occurred, the Department will be notified in writing within seven (7) days of the findings in Step 3 in accordance with 6 CCR 1007-3 Section 264.98 (g)(1) along with the Permittee's intentions with regard to a source demonstration pursuant to the requirements of 6 CCR 100 7-3 Section 264.98(g)(6).

Step 7. If the results of Step 3 show an SSI has occurred and a source demonstration is not going to be conducted, the groundwater in all of the monitoring wells

will be sampled and analyzed for 6 CCR 1007-3, Part 264, Appendix IX constituents within one month following the results of the additional sampling described in Step 3.

Step 8. Within ninety (90) days following determination of an SSI, an application for permit modification will be submitted to the Director, or designee, for changes to the detection monitoring program, implementation of a compliance monitoring program, or a permit modification application for a variance; and/or the source demonstration report will be submitted.

In addition to the notification requirements for an SSI, the Permittee will submit annual reports detailing the procedures, results, and statistical evaluations from the detection monitoring. All annual reports will be submitted no later than 45 working days after receiving the laboratory analytical results from the last sampling event within the reporting period.

All of the piezometric head information obtained from the RCRA groundwater monitoring wells will be reported along with the water quality data on an annual basis. The water level data will also be plotted for each water level measurement event and submitted with the annual report. This information will not be subjected to any statistical analysis. It will, however, be used to evaluate upgradient and downgradient conditions.

2.9 Data Management

The results of the field and laboratory analyses performed on groundwater samples will be recorded for each sampling point and sampling event. The records will include the following information:

- Well identification and date of analysis;
- Analytical results for all required sample parameters, as well as results for QA/QC duplicates and test blanks;
- Field data (including temperature, pH, specific conductance, and water level);
- Description of analytical procedures and QA/QC protocol;
- Chain-of-custody forms;
- Summary of all computations (including example calculations; data for each of the calculations; each measured, known, or estimated value so that each calculation may be verified by the Director, or designee) required by this Permit to calculate

background concentrations and to determine if there has been a statistically significant increase above background (SSI); and

- Contaminant concentration maps including annotated values associated with each monitoring point, if contaminants above background are detected.

Laboratory data will be presented in tabular and/or graphic form. In addition, copies of the laboratory analysis and field (inspection) data sheets for the reporting period will be included in the annual report. All raw analytical data will be stored by the analytical laboratory or the Permittee.

2.10 Data Confirmation Review

Initial evaluation of groundwater analytical data will entail data confirmation through QA/QC review. The first step will be a thorough review of lab and field procedures, including review of field equipment calibration information, recoveries of spiked samples, and field blank analyses. In addition, a detailed review of the chain-of-custody records for sampling, shipping, and preparation of the samples will be performed. A QAR will be filed to determine if suspect data are the result of a mathematical error, a lab artifact, other lab errors, or a shipping/sampling problem should the initial cursory review prove to be ineffective or inconclusive. At this stage of the groundwater data evaluation, data will be corrected if shown to result from a calculation error or a data transcription error. Laboratory artifacts will be addressed individually.

2.11 Permit Modification/Source Demonstration

If an SSI is determined, the Permittee will invoke its option to submit a permit modification or implement a source demonstration investigation.

3.0 COMPLIANCE MONITORING

Data collected since background monitoring at the reconstructed cell facility was completed establish that there has been no SSI of any of the indicator parameters at any of the RCRA groundwater monitoring wells. Therefore, pursuant to 6 CCR 1007-3, Section 100.41(c)(7), a compliance monitoring program is not required. If a SSI for any parameter at any of the RCRA groundwater monitoring wells is determined during detection monitoring, the Permittee will submit a permit modification application to establish a compliance monitoring program.

4.0 CORRECTIVE ACTION

A program for corrective action is not required pursuant to 6 CCR 1007-3, Sections 100.41 and 264.100, since there has been no SSI for any of the indicator parameters at any of the RCRA groundwater monitoring wells. Should a corrective action program be required in the future, the Permittee will submit a permit modification application to establish such a program.

Attachment G

Sandstone Units and Leachate Monitoring Plan

1.0 GENERAL

The purpose of monitoring the upper and intermediate sandstone units is to continue to measure and record groundwater levels in these units in the vicinity of the reconstructed cell. Additionally, the groundwater from these sandstone units will be sampled and analyzed for VOCs and constituents identified in Table F-1 and Table G-1. Constituents in Table G-1 will only be analyzed in the sandstone units if the constituents are detected in secondary leachate sample(s) at levels above their respective action limit. Additional measures will also be conducted if constituents in Table G-1 exceed the detection limit in the secondary sump, reference Section 4.0 below, steps 1 and 2.

TABLE G-1

SECONDARY LEACHATE DETECTION SYSTEM ANALYTES
("Detection Limits" and "Action Limits" are in µg/L = micrograms per liter)

CONSTITUENT	DETECTION LIMIT	ACTION LIMIT
Benzene	5.0	5.0
Carbon tetrachloride	1.0	5.0
Chlorobenzene	5.0	100
Chloroform	3.5	3.5
1,2 Dichloroethane	1.0	5.0
1,1 Dichloroethene	5.0	7.0
Methyl ethyl ketone	100	1,000
Tetrachloroethene	5.0	5.0
Trichloroethene	5.0	5.0
Vinyl Chloride	2.0	2.0
Arsenic	10	10
PFOA/PFOS	0.01	0.2

2.0 MONITORING NETWORK

The monitoring network for the upper and intermediate sandstone units consists of the following:

- Piezometers GC-18, GC-21, and P-107 which are completed in the upper sandstone unit and which are illustrated in Figure 6.
- Piezometers GC-16, GC-22, and GC-26 which are completed in the intermediate sandstone unit and which are illustrated in Figure 7.

These piezometers have been used to date to monitor groundwater levels in the upper and intermediate sandstone units.

3.0 WATER LEVEL MEASUREMENTS AND REPORTING

All groundwater level measurements will be conducted pursuant to ASTM standards or equivalent. The following steps will be performed for each groundwater level measurement event:

Step 1: Inspection. Prior to making the water level measurement, each piezometer will be inspected. Any notable condition of the piezometer structure that could affect the water level measurement will be documented.

Step 2: Static Water Level Measurement. The static water level will be measured and recorded until reproducible results are obtained. The static water level will be measured as the depth of water in the piezometer from the top of the casing and will be recorded to the nearest 0.01 foot.

Water level measurements will continue semi-annually through the post-closure care period. The results of the water level measurements will be recorded for each piezometer and each water level measurement event. The record will include the piezometer identification and date of water level measurement.

All of the groundwater level measurements will be reported on an annual basis along with the water quality data submitted in accordance with Appendix F -- Groundwater Monitoring and Statistical Evaluation Procedures. The groundwater level measurements will also be plotted and submitted with the annual report.

4.0 GROUNDWATER SAMPLING AND ANALYSIS

Pursuant to the conditional delisting, the leachate from the reconstructed cell leachate sumps is to be analyzed at least once a year.

If, in the future, any of the constituents listed in Table G-1 are detected (pursuant to the inspection requirements set out in the Inspection and Maintenance Plan, Appendix C) in the leachate that collects in the reconstructed cell leachate secondary sump at levels above the action limit for PFOA/PFOS or the detection limits of the other constituents listed in Table G-1 (hereinafter “trigger limit”), the Permittee shall proceed as follows:

Step 1: The detection of an analyte above its respective trigger limit listed in Table G-1 shall be confirmed through a review of the QA/QC data to verify that acceptable field and laboratory data have been generated and recorded and, if appropriate, resampling of the leachate within forty-five (45) days of data receipt. If the detection is not confirmed, the Permittee will continue with groundwater level measurements in accordance with Section 3.0 of this

Appendix G. If the detection is confirmed, the Permittee will proceed to the following steps.

Step 2: If detection of an analyte above its respective trigger limit listed in Table G-1 is confirmed in the secondary sump leachate in Step 1, the Permittee will use reasonable efforts to identify and remedy the cause of the detection and will, within sixty (60) days after confirmation submit a report to the CDPHE for review and approval which:

a. Contains the results of the field and laboratory analyses performed;

b. Discusses the analytical results;

c. Summarizes the efforts in identifying and remedying the cause of the detection; and

d. Presents a plan for further work and monitoring (as and if necessary) together with any necessary permit modification requests for implementing such further work, to further identify and remedy the cause of the detection.

Step 3: If detection of any VOC or PFOA/PFOS analyte above the action limit listed in Table G-1 is confirmed in the secondary sump leachate in Step 1, the Permittee will, within forty-five (45) days after confirmation of the detection, initiate the field activities for the installation of three groundwater monitoring wells in the upper sandstone unit and three groundwater monitoring wells in the intermediate sandstone unit at locations as generally shown in Figure 3 and, upon completion of these groundwater monitoring wells, the Permittee will sample them in accordance with the procedures set forth in Sections 2.4 and 2.6 of Appendix F for the following parameters:

(i) For detection of any VOC, the samples will be analyzed for the VOC constituents listed in Table F-1 of Appendix F in accordance with the laboratory analytical procedures listed in Section 2.5 of Appendix F. The Permittee will also review the QA/QC data to verify that acceptable field and laboratory data have been generated and recorded and, if appropriate, resample any wells found to have unacceptable data.

(ii) For detection of any PFOA/PFOS, the samples will be analyzed for PFOA/PFOS in accordance with the USEPA Method 537, Modified analytical procedures until EPA Method 8328 is finalized, and the Permittee will also review the QA/QC data to verify that acceptable field and laboratory data have been generated and recorded and, if appropriate, resample any wells found to have unacceptable data.

If detection of arsenic above the action limit in Table G-1 is confirmed in the secondary leachate sump, the Permittee will, within forty-five (45) days after confirmation of the detection, either:

a. Submit a report to the CDPHE demonstrating that the arsenic detection above the action limit in Table G-1 was caused by a source other than the waste in the reconstructed cell; or

b. Initiate the field activities for the installation of three groundwater monitoring wells in the upper sandstone unit and three ground monitoring wells in the intermediate sandstone at locations as generally shown in Figure 3. Upon completion of these groundwater monitoring wells, the Permittee will sample them in accordance with the procedures set forth in Sections 2.4 and 2.6 of Appendix F. The samples will be analyzed for arsenic in accordance with the laboratory analytical procedures listed in Section 2.5 of Appendix F and the Permittee will also review the QA/QC data to verify that acceptable field and laboratory data have been gathered and recorded and, if appropriate, resample any wells found to have unacceptable data.

Step 4: The Permittee will, within forty-five (45) days after receipt of the final laboratory results for the sampling event described in Step 3, submit a report to the CDPHE which:

a. Outlines the activities performed;

b. Contains all field information relevant to the installation of the new groundwater monitoring wells in the upper and intermediate sandstone units;

c. Contains the results of the field and laboratory analyses performed including the information listed in Section 2.9 of Appendix F;

d. Discusses the analytical results; and

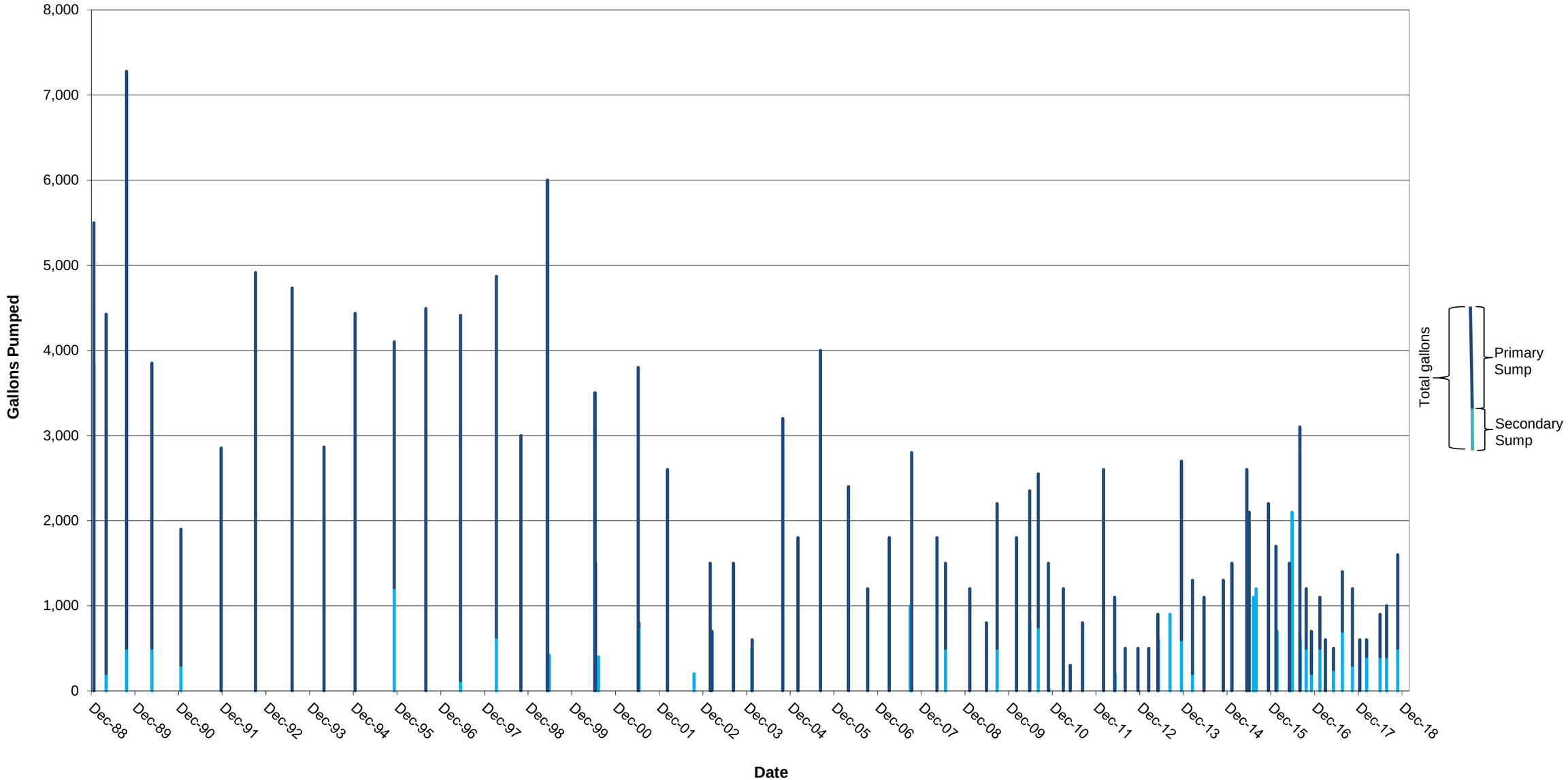
e. Presents a plan for further work (if necessary); together with any necessary permit modification requests for implementing such further work, to determine if the effectiveness and integrity of the reconstructed cell has been compromised.

Attachment H

Leachate Pumping Results

FIGURE H-1

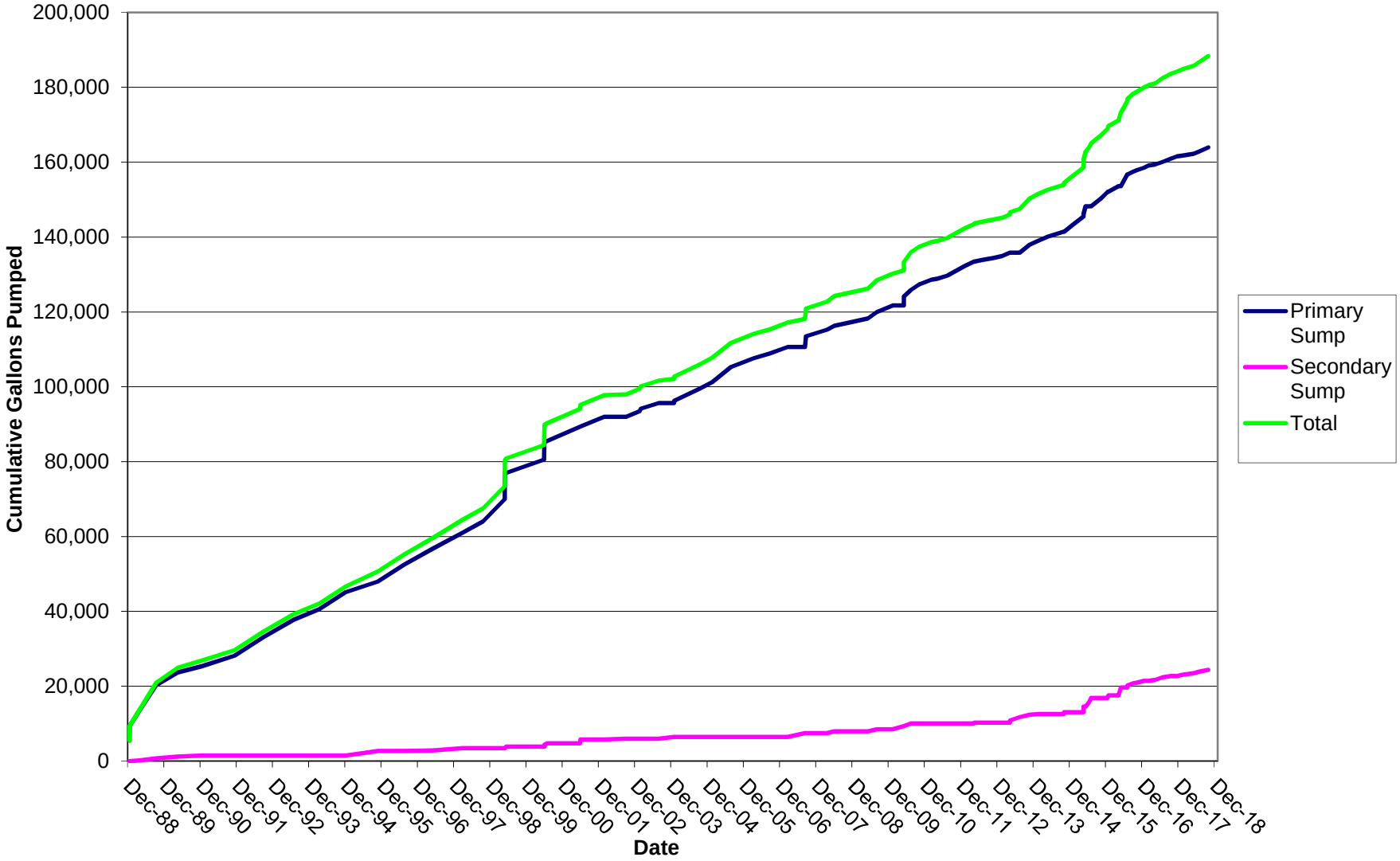
Pumping Summary
Primary and Secondary Sumps



GOLDER

FIGURE H-2

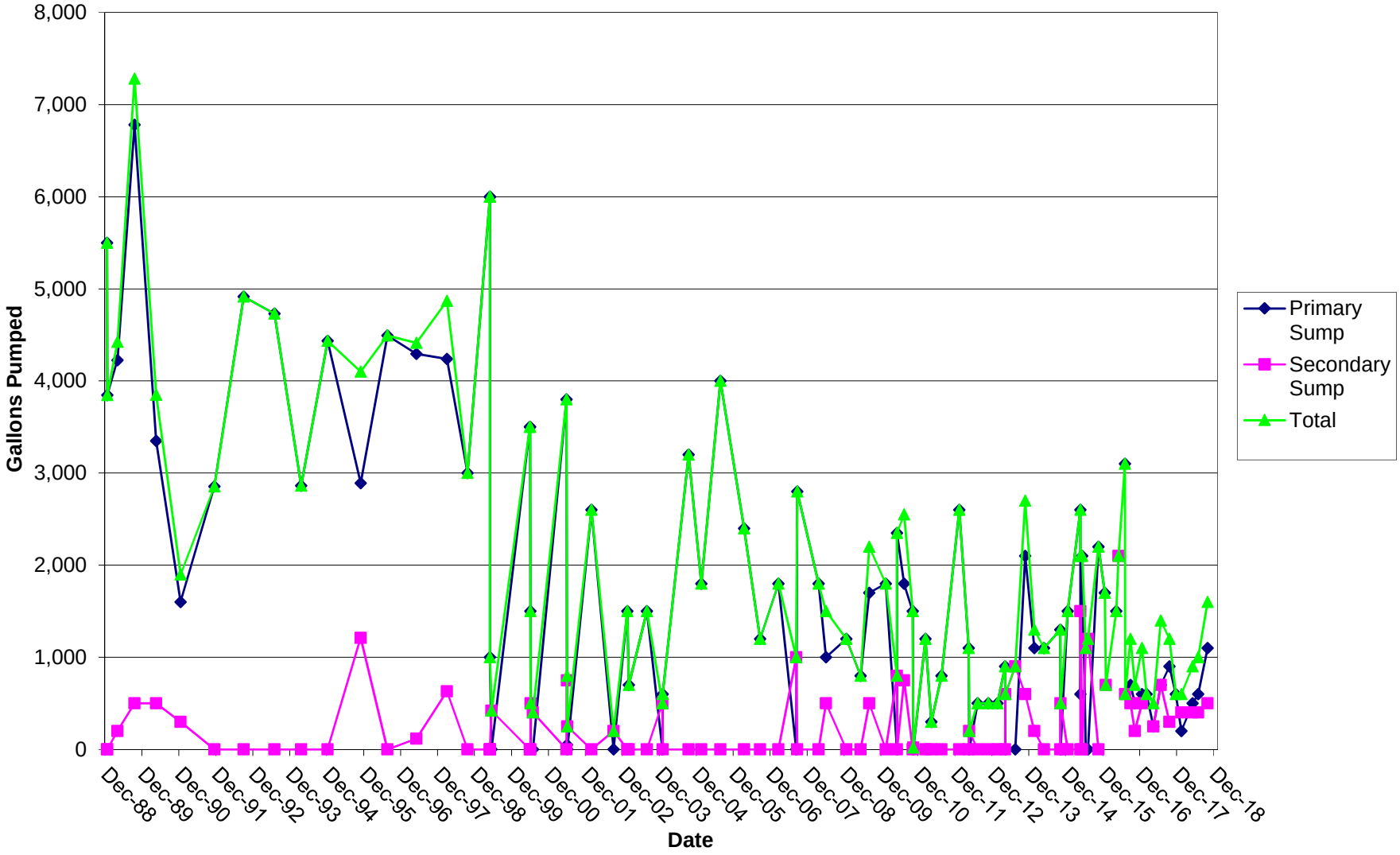
Cumulative Pumping Summary
Primary and Secondary Sumps



GOLDER

FIGURE H-3

Pumping Summary
Primary and Secondary Sumps



GOLDER

Attachment I

Personnel Training Plan

1.0 INTRODUCTION

In accordance with the regulatory requirements of 6 CCR 1007-3, Section 100.41 (a)(12), this Training Plan has been developed for the post-closure care of the facility.

2.0 POSITION (JOB) DESCRIPTIONS

Training is tailored to prepare the worker to safely and effectively perform the functions of his/her position and to ensure that the worker will be able to respond effectively to emergency situations at the facility. Job descriptions are the key to designing training programs because they identify the responsibilities and duties of each position.

Position descriptions, including basic function, specific duties and responsibilities, and required qualifications will be maintained by the Permittee at the designated post-closure operational offices. A current list of job titles and the name of the worker (or third party contractor when appropriate) filling each respective position will also be maintained. The facility organization and position descriptions may be changed from time to time, as the facility implements modifications to its post-closure operations. The Training Plan will correspondingly be amended to reflect these modifications.

3.0 TRAINING FOR NEW PERSONNEL

Personnel who are new to the facility ("new personnel") will undergo introductory general training, which is defined in this section. In addition, special skills training (e.g., sampling of monitoring wells) may be required depending on job duties, other assigned responsibilities, and the prior experience of the new personnel. Some of the training requirements may be waived upon a demonstration of prior competence. Proof of competence may consist of transcripts from academic institutions, certificates of course completion, and/or work experience.

New personnel will complete a series of general training courses (including classroom and on the job instruction) to familiarize them with basic health and safety procedures, hazardous wastes, the facility, and the Contingency Plan. These courses will be designed to give new personnel basic skills to protect themselves and others and to implement the Contingency Plan.

3.1 Basic Health and Safety Training

New personnel in positions that involve potential contact with hazardous wastes will receive basic health and safety training. This health and safety training will be conducted by qualified personnel and will meet OSHA requirements, pursuant to 29 CFR 1910.120, and include care, use, and limitations of protective equipment and clothing; chemical hazards and handling precautions; first aid; and regulatory requirements.

3.2 Orientation

New personnel will also undergo an orientation session to introduce them to the management and maintenance operations of the facility. This orientation program will include procedures for entering and leaving the facility; facility layout; the nature and characteristics of hazardous wastes and materials at the facility; an overview of the facility's operations and safety rules; and general facility rules and administrative procedures; training requirements; and job duties.

During orientation, new personnel will be thoroughly familiarized with the facility's Contingency Plan. Training in emergency procedures will be provided by the Emergency Coordinator (EC), the alternate coordinator, or other qualified trainers. At a minimum, it will include:

- Description of possible emergency situations;
- Duties of the EC and others;
- Operation of communication systems;
- Location of emergency equipment; and
- Incident/action reporting mechanism(s).

This instruction will include a facility walk-through to: (1) point out areas of potential risk; (2) identify what to look for; and (3) show where emergency equipment are located. The Emergency Coordinator or other qualified trainer will ensure that new personnel have successfully demonstrated their knowledge of these topics.

4.0 TRAINING PROGRAM ADMINISTRATION

The trainers (instructors) will be recognized consultants or specialists in the specific fields being taught or will have broad experience in hazardous waste management.

Training will be conducted in classroom meetings, small discussion groups, in-field exercises, emergency drills, and on-the-job.

Corrective action will be taken as soon as a deficiency is observed so that the new personnel do not develop poor working habits.

Completion of required training will be entered into the training record.

New personnel will be allowed to perform work under reduced supervision at the facility when he or she has successfully demonstrated completion of the new personnel training requirements. New personnel must successfully complete the required training within six months after the date of their employment or assignment to the facility, or to a new position at the facility.

5.0 CONTINUING TRAINING

Periodic "refresher" training will be required and provided, as discussed herein.

5.1 Frequency of Training

Continuing training is designed to maintain proficiency in job skills, increase safety and quality consciousness, and to teach new skills. Such training will include regularly scheduled:

- Annual protective equipment reviews;
- Annual Contingency Plan refresher training;
- As needed training to teach new skills, new operating procedures, or greater depth in specific areas.

As-needed training will be provided to cover any changes in the facility plans, procedures, or operations, and to teach new skills -- either before or as such changes occur.

6.0 DOCUMENTATNION OF TRAINING

Training records will be maintained. They will include, as illustrated in the example training session record in Figure 1 of this Plan, a written description of the content of each training session, a list of attendees and trainers, the dates of training sessions, and the signatures of trainers and attendees certifying that the training was accomplished.

Training documentation for each worker will be maintained throughout the post-closure period, or for at least 3 years after the date such worker last worked at the facility, whichever period is shorter.

TRAINING SESSION RECORD

Course:

Date: Location/Time:_____

Description of Training:

_____

_____

Printed Name	Signature	Work Location

Trainer(s) Name: _____

Trainer(s) Signature: _____

FIGURE 1